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Economic Indicators: The Utah Economic Business Review

by Mickee Roll, Research Assistant

One result of the rapidly increasing complexity of society today, reflecting the magnitude of changes occurring, is that intelligent decision making by households, business and/or government is dependent upon reliable, timely data and information. Providing indicator data on economic and business conditions for Utah and designated areas within the State has been one of the principal objectives of the *Utah Economic and Business Review*. This objective, as stated in the first issue of the *Review*, published by the Bureau of Economic and Business Research in December of 1941 was to: "... accumulate a growing body of information on the basic features of the economic and business activities in Utah ... and as other numbers appear (make) a more and more complete file of basic data available for reference."¹

In that first issue the Bureau announced plans to publish monthly; however, the manpower and paper shortages that were a result of World War II interrupted that publication schedule. The *Review* was then published quarterly from 1948 through the first quarter of 1949; and, since June 1949, has been issued on a monthly basis. First editor of the *Utah Economic and Business Review* was Dr. J. R. Mahoney, who was also first director of the Bureau of Economic and Business Research and who continued his association with the Bureau on active and emeritus status until his death earlier this year. (See accompanying tribute.)

IN MEMORIAM

Dr. J. Rolla Mahoney
1894-1979

With the death of Dr. J. Rolla Mahoney comes the close of a long and productive career in education and economic research into the development of the natural resources of Utah and the West. Citizens of this part of the United States are the beneficiaries today of a lifetime of work by Dr. Mahoney. He not only left his mark as a scholarly, dedicated researcher, but he was an organizer and a policy maker as well.

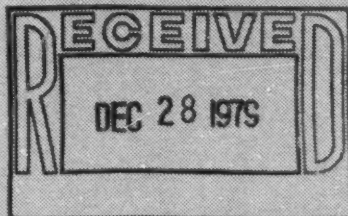
Dr. Mahoney had a broad interest in public education, serving a term as president of the Utah Education Association. During this time, he was instrumental in creating, through the Uniform School Fund, a system of equalizing taxes and school expenditures throughout the State — a system that is recognized today as one of the finest in the nation. Through his efforts, the universities and colleges of Utah receive each year a substantial amount of revenue from federal mineral leases for research purposes.

¹ *Utah Economic and Business Review*, Vol. 1, No. 1, December 1941.

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Dr. J. Rolla Mahoney

Director of the Bureau of Economic and Business Research
1932-1949

A professor of economics at the University of Utah from 1926 to 1966, Dr. Mahoney held professor emeritus status until his death earlier this year. When the University's Bureau of Economic and Business Research was established in 1932, Dr. Mahoney became its first director, serving in that office until 1949. His major research interests were the economics of natural resources, public lands, minerals, and water, and he prepared and published many scholarly reports in these areas. Dr. Mahoney's work was a major factor in the locating of United States Steel Company's Geneva plant in Utah.

Extensive studies by Dr. Mahoney on the navigability of the Green and Colorado River systems led to federal negotiations which resulted in the awarding of title to large portions of the beds of these waters to the State of Utah, thus making available to the people of Utah extensive mineral and other resources.

The talents of Dr. Mahoney were recognized nationally, and he served for several years as chairman of the National Education Association's School Finance Committee. He also served from 1947 to 1955 as a Senior Specialist in the Legislative Reference Service of the Library of Congress, advising national legislators on the economics of natural resources — particularly those in the Western states.

In 1955, Dr. Mahoney returned to Utah from Washington, D.C., and from this time until his death he continued his research on problems of water resources and public lands. For all of this — and much more — the State of Utah and the Nation owe a special debt of gratitude to Dr. J. Rolla Mahoney.

Economic Indicators: (continued)

Single copies of the Review are distributed free of charge to over 4,000 information users throughout the State of Utah as a community service by the University of Utah. The statistics section provides economic indicator data pertaining to the Utah economy not available in any other one source. From time to time during the past 38 years, the *Review* has updated and revised the format and data presented on the statistical pages to provide as much information and coverage of the State as possible given the available data.

Some revisions in the data series are being made beginning with this issue. This article outlines the data series to be published in future months and identifies the major changes being made. Since that first issue, the *Review* has presented State-wide data under the headings of Agriculture, Production, Finance, Employment, Construction and Local Business Activity in the selected cities of Salt Lake, Ogden, and Provo. In the future, the *Review* will continue to present data that will reflect the growth and economic activity in these cities as well as other regions of the State. For regional classification, the Governor's designated seven multi-county districts will be used. These areas were created by executive order on May 27, 1970,² and are used by most State agencies, and federal agencies where practical, for planning, administrative and other purposes.

Regional Designation

The Multi-county districts (MCD), and the counties that comprise each district are as follows:

1. Wasatch Front District — Salt Lake, Davis, Weber, Tooele, and Morgan Counties
2. Mountainland District — Utah, Wasatch, and Summit Counties
3. Central Utah District — Juab, Millard, Sanpete, Sevier, Piute, and Wayne Counties
4. Uintah Basin District — Duchesne, Daggett, and Uintah Counties
5. Bear River District — Box Elder, Cache, and Rich Counties
6. Southeastern District — Carbon, Emery, Grand, and San Juan Counties

²Utah Multi-County Districts for Planning and Development, State Planning Coordinator, Office of Governor Calvin L. Rampton, 1971, Appendix A, p 47.

7. Southwestern District — Beaver, Iron, Washington, Garfield and Kane Counties

MCD Statistical Data

The data presented for each MCD will be

1. Non-Agricultural Employment
2. Authorized Permit Construction
3. New Dwelling Units
4. Postal Receipts
5. Telephones in Use
6. Natural Gas Customers
7. Electric Power Customers

Non-Agricultural Employment

The non-agricultural employment figure is the number of jobs held by individuals as reported by the Utah Department of Employment Security in its monthly publication, *Employment Newsletter*.

Authorized Permit Construction and New Dwelling Units

Authorized permit construction figures give the dollar value and new dwelling units list the number of residential and non-residential buildings for which permits are authorized. Permit data are obtained from the *Utah Construction Report* published quarterly by the Bureau of Economic Research in cooperation with F. W. Dodge Division, McGraw-Hill Information Systems Company.

Postal Receipts

Total postage receipts, reflecting both sales and metered mail, are obtained from reporting post offices in selected cities within the MCDs.

Telephones in Use

Cooperating telephone companies report to the Bureau of Economic and Business Research the number of main stations in service within the State. (A main station is the telephone line, less extensions, and represents the number of telephone lines for both business and residential use.)

Electric and Natural Gas Customers

The number of natural gas customers and electric customers is reported by participating fuel companies and electric companies, respectively. The geographical divisions reported by those companies do not in all cases follow MCD boundaries, but do correspond to general areas.

Department Store Sales

For the Wasatch Front MCD only, a figure published by the U.S. Department of Commerce, Bureau of the Census, entitled Monthly Department Store Sales will be included. This number excludes Morgan County, but will cover the reporting retail trade of 26 department stores in the remaining counties in that MCD.

Classification of department stores is based on criteria described in the *1972 Standard Industrial Classification Manual* published by the Office of Management and Budget. In summary, a retail store is defined as a department store if it has 25 or more employees and sells items in each of the following lines of merchandise: (1) furniture, home furnishings, appliances, radio and T.V. sets; (2) a general line of family apparel; and (3) household linens and dry goods; but with no one of the three categories accounting for as much as 80 percent of total sales. "Discount Stores" are included providing they meet the criteria described above.

State-Wide Statistical Data

The State-wide statistical data will continue to consist of the general area headings of Agriculture, Employment, Construction, Production and Finance. Two sections, Tourism/Travel and a General (or miscellaneous) data grouping, have been added.

The year-to-date business statistics, formerly appearing as a separate section, has been eliminated. As a cumulative figure, a 12-month average for the current year, previous year, and percent change column, will replace year-to-date figures and will appear on the same line as the monthly data. This format change will facilitate data scrutiny and improve comparability among time series.

Agriculture

The agriculture data available for publication includes 1) Cash Receipts from Farm Marketing, 2) Average Prices Received by Farmers, and 3) Livestock Slaughtered. The average prices received by farmers for wheat and eggs is no longer available. This deletion is the only change from data previously published.

Cash Receipts from Farm Marketings

The cash receipts figure is the total of (a) livestock and livestock products, and (b) crops. These data are published monthly by the U.S. Department of Agriculture; Economics, Statistics, and Cooperatives Service in their publication *Cash Receipts from Farm Marketing by State*.

Average Prices Received by Farmers

The USDA's Utah Crop and Livestock Reporting Service in Salt Lake City details in their report, *Utah Agriculture Prices*, the averages of prices for all grades and qualities of each item at all locations and methods of selling. The prices refer to sales occurring about the 15th of the month except for milk which is an average for the month. Besides milk, prices for beef steers and heifers, turkeys, lambs and baled alfalfa hay are reported.

Livestock Slaughtered

The Utah Crop and Livestock Reporting Service is also the source for the Utah totals for livestock slaughtered. The live weight listing reports sheep and lambs, hogs and pigs, cattle and calves.

Finance

The time series data as presented in the past will be continued. These data include total loans, investments, demand deposits, time deposits, and other demand deposits of member Federal Reserve banks; savings deposits of savings and loan institutions, the sale of series E and H savings bonds, and the number of new corporations.

In addition to the total tax collection figure, sales and use tax, motor fuel tax, individual income tax and corporation franchise tax will be reported.

Loans, Investments, Deposits, Total, Utah Member Banks

From the Federal Reserve Bank of San Francisco, Statistical and Data Services Department, the monthly bulletin FR 2635X-2 is used as the source for this item. Included are total loans, investments, a total deposit figure and its components (demand deposits, time deposits, and other demand deposits — which combines U.S. Government and other). This information is a consolidation of twelfth district member banks in the State of Utah.

Savings, Savings and Loan Associations

The Salt Lake savings bond department of the U.S. Department of Treasury reports total E and H Series bond sales on a monthly basis.

New Corporations

This is the number of new corporations filed with the Secretary of State's office and includes profit, non-profit, and foreign corporations in the State of Utah.

Tax Collections by the State of Utah

In previous issues only the total tax figure has been reported. Beginning with this issue, sales and use tax, motor fuel tax, individual income tax, and corporate franchise tax are included as monthly figures. This information is obtained from the Revenue Accounting Division of the Utah State Tax Commission, Report TC-23 and TC-18.

Employment

The series on employment data will continue, listing civilian labor force (total employed persons and unemployed persons) and combined as a percentage of total labor force. Employees on nonagricultural payrolls broken down by industry will be reported. Average weekly hours for manufacturing, mining, contract construction, and wholesale and retail trade as well as unemployment compensation will be published monthly. The source for all employment data is the Utah Department of Employment Security, *Employment Newsletter*.

Construction

State-wide construction data remain unchanged. The total construction, residential construction, non-residential construction and public works and utilities data are collected and provided to subscribers of the F.W. Dodge Division, McGraw-Hill Information Systems Company, *Construction Potentials*. The State authorized permit construction numbers are reported to the Bureau of Economic and Business Research each month by building inspectors and county or city clerks and published quarterly in the *Utah Construction Report*.

Tourism/Travel

The section on Tourism/Travel is a new addition to the statistics pages of the *Review*. The four categories of information will present first time data pertaining to the growing tourism and travel trade in the State.

Air Passengers

Total number of passengers both departing (on) and arriving (off) on scheduled airlines, non-scheduled, and charter flights are reported. The source is the Salt Lake International Airport.

Highway Traffic Count Across State Lines

The Utah Department of Transportation, Travel Analysis Unit, issues a traffic bulletin each month detailing traffic volume at 64 permanently operated traffic recording stations located on the various highway systems throughout the State. Major highways leading into the State have been selected and that figure presented as an indicator of traffic across State borders.

Transient Room Taxes

These data are taken from the State tax collections, Utah State Tax Commission, Report TC-23, and included as a measure of commercial lodging and barometer of State travel.

Visits to State and National Parks and Monuments

Visitation records are kept for the State units by the Division of Parks and Recreation and for the federal units by the National Park Service.

General

Under the heading "General" are grouped miscellaneous data. New car and truck sales information (including foreign) is obtained from the Utah Automobile Dealers Association. New categories added under the General heading are telephone, electric power and natural gas customers (business, residential/commercial). Cooperating utility companies throughout the State furnish these statistics.

Production

Utah possesses an abundance of natural resources, particularly minerals and energy fuels. Production data on these natural resources has been a part of the *Review's* statistic pages from the beginning. As more and more emphasis is put on the development of natural resources, Utah's contribution of essential raw materials and energy sources will be particularly revealing as to the economic activity taking place in the State.

Net Electric Power Utilized

Cooperating Utah power companies and power generating firms individually report each month the power generated within their system. This figure is the composite number reflecting their input.

Crude Oil to Refineries

The total month's receipts of crude oil to Utah refineries (listed in thousands of barrels) is given each month by participating refineries to the BEBR.

Crude Oil Production and Natural Gas Production

The source for both the crude oil and natural gas production is the monthly report compiled by the State of Utah, Division of Oil, Gas and Mining.

Coal Production and Copper Production

Coal and copper are important minerals for the economic development of Utah. The future of several counties in the State rests upon the utilization of their coal resources; and as the world copper market is recovering after the slowdown of the past several years, both industries face periods of rapid expansion.

The weekly coal report, distributed as part of the *Energy Data Reports* that are issued by the U.S.

Utah Business Statistics

Statewide Statistical Data

	May 1979	April 1979	May 1978	% Chg. From Year Ago	12 Mo. Average Ending		
					May 1979	May 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.)*	42,787	38,300 ^f	29,182	46.6	40,460	31,465	28.6
Livestock and Livestock Products (thous. of dol.)	31,053	33,063 ^f	25,075	23.8	31,832	24,457	30.2
Crops (thous. of dol.)	11,734	5,237 ^f	4,107	185.7	8,628	7,203	19.8
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)	75.9	79.4	53.6	41.6	62.3	41.4	50.5
Lambs (cwt)	63.5	63.1	59.1	7.4	61.1	54.3	12.5
Turkeys (per lb.)	.44	na	na	x	.48	.38	26.3
Milk, Wholesale (cwt)	11.4	11.4	9.7	17.5	10.9	9.6	13.5
Alfalfa Hay, Baled (per ton)	52.50	52.0	50.5	4.0	48.8	56.6	-13.8
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	15,060	13,284	17,084	-11.8	17,398	21,393	-18.7
Calves (thous. of lbs.)	-	-	-	x	20	41.7	-52.0
Sheep and Lambs (thous. of lbs.)	212	189	237	-10.5	211	231	-8.7
Hogs and Pigs (thous. of lbs.)	2,377	2,285	2,006	18.5	2,067	2,410	-14.2
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	2,954	2,947	2,831	4.3	2,920	2,528	15.5
Investments, Total, Utah Member Banks (mil. of dol.) ^a	849	840	785	8.2	807	739	9.2
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,799	3,779	3,596	5.6	3,682	3,232	13.9
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	57	47	58	-1.7	54	51	5.9
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,153	1,133	1,163	-0.9	1,146	1,068	7.3
Time Deposits, Total, Utah (mil. of dol.) ^a	2,589	2,599	2,375	9.0	2,483	2,113	17.5
Savings, Savings and Loan Association (mil. of dol.) ^b	1,589.0	1,579.2	1,400.9	13.4	1,502.9	1,374.4	9.3
Sale of U.S. Savings Bonds - Series F & H (thous. of dol.)	2,617	1,713	2,592	1.0	2,286	2,767	-17.4
New Corporations (no.)	429	323	432	-0.7	412	372	10.8
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	159,557.2	40,775.5	125,546.3	27.1	6,728.1	5,712.9	17.8
Sales & Use Tax	35,222.6	2,951.5	68,928.9	-48.9	2,632.5	2,126.0	23.8
Motor Fuel Tax	9,187.4	1,291.6	4,324.7	112.4	561.0	398.6	40.7
Individual Income Tax	55,861.7	18,812.7	40,095.7	39.3	2,197.7	1,737.6	26.5
Corporation Franchise Tax	7,860.6	12,613.7	6,918.2	13.6	317.9	274.0	16.0
Employment							
Civilian Labor Force (thous.)	615.4	613.8	583.0	5.6	602.0	566.2	6.3
Total Employed Persons	592.0	589.1	561.4	5.5	574.3	537.6	6.8
Unemployed	23.4	24.7	21.5	8.8	27.5	28.6	-3.8
Percent Total Labor Force	3.8	4.0	3.7	2.7	4.6	5.0	-8.0
Employees on Nonagricultural Payrolls (thous. of jobs)	556.3	533.1	523.4	6.3	538.3	502.9	7.0
Manufacturing	84.5	83.2	77.9	8.5	82.9	76.2	8.8
Mining	17.6	17.5	16.1	9.3	16.9	14.7	15.0
Contract Construction	36.8	35.5	35.5	3.7	35.6	33.6	6.0
Transportation, Communication and Utilities	34.1	31.3	31.6	7.9	32.7	30.2	8.3
Wholesale Trade	34.7	34.4	31.5	10.2	32.9	29.9	10.0
Retail Trade	98.9	98.0	95.2	3.9	97.7	92.1	6.1
Finance, Insurance and Real Estate	25.9	25.9	24.1	7.5	25.1	23.2	8.2
Services ^c	96.0	98.0	88.1	9.0	94.2	86.1	9.4
Federal Government	37.0	37.3	37.4	-1.1	36.8	36.6	0.5
State Government ^d	31.6	32.0	32.4	-2.5	31.6	3.3	
Local Government ^d	58.0	57.4	53.7	8.0	53.6	49.1	9.2
Average Weekly Hours:							
Manufacturing	38.2	38.7	39.3	-2.8	39.2	39.8	-1.5
Mining	39.6	39.6	43.0	-7.9	42.0	42.4	-0.9
Contract Construction	36.8	37.1	38.6	-4.7	37.9	41.3	-8.2
Wholesale Trade	37.1	37.5	37.1	0.0	37.3	35.7	4.5
Retail Trade	27.5	28.1	27.7	-0.7	28.0	29.3	-4.4
Amount of Unemployment Comp. (thous. of dol.)	3,701.3	3,929.7	2,791.2	32.6	3,746.4	3,299.4	13.5
Construction							
Total Construction (thous. of dol.)	123,543	141,791	111,673	10.6	111,962.4	96,138.4	16.5
Residential	78,749	73,464	68,863	14.4	60,045.4	58,349.5	2.9
Nonresidential	29,935	65,963	33,749	-11.3	37,451.0	27,345.2	37.0
Public Works and Utilities	14,859	2,364	9,061	64.0	14,466.0	10,443.8	38.5
Total Permit Construction (thous. of dol.) ^e	131,571.8	119,716.4	113,389.0	16.0	96,164.9	91,993.5	4.5
Residential	72,888.8	64,553.9	80,543.3	-9.5	56,821.2	63,851.8	-11.0
Nonresidential	50,939.2	47,841.7	26,985.7	88.8	33,095.0	22,464.1	47.3
Additions, Alterations and Repairs	7,743.8	7,320.8	5,860.0	32.1	5,973.6	5,677.6	5.2
New Dwelling Units (no.)	1,714	1,869	2,323	-26.2	1,563	1,972	-20.7
Tourism/Travel							
Air Passengers (total no. on and off)	351,477	358,727	332,840	5.6	372,799	323,138	15.4
Highway Traffic Count Across State Lines	37,729	37,825	42,042	-10.3	42,373	41,721	1.6
Transient Room Taxes (thous. of dol.)	145.8	121	441.3	-67.4	138.0	145.7	-5.3
Visits, State, Nat'l. Parks, Monuments (thous.)	1,297.2	1,124.6	1,513.5	-14.3	1,111.1	1,088.0	2.1
General							
New Cars and Truck Sales	na	na	5,279	x	7,547	6,193	21.9
C.P.I. (National Index - 1967=100)	214.1	211.5	193.3	10.8	203.5	186.5	9.1
Telephones in Service (Business)	73,180	72,808	69,714	5.0	71,577	67,716	5.7
Telephones in Service (Residential)	391,079	391,389	371,763	5.2	385,754	365,731	5.5
Electric Customers (Business)	31,651	31,529	29,997	5.5	31,041	28,831	7.7
Electric Customers (Residential)	339,036	339,298	323,072	4.9	332,130	314,879	5.5
Natural Gas Customers (Residential and community)	452,545	456,927	430,781	5.0	442,664	422,322	4.8
Natural Gas Customers (Industrial)	939	935	972	-3.4	938	961	-2.3
Production							
Net Electric Power Utilized (mil. of kwh)	939.3	919.3	880.0	6.7	967.0	869.6	11.2
Crude Oil to Refineries (thous. of bbls.)	4,805.3	4,234.4	4,983.1	-3.6	5,034.4	4,995.2	0.8
	(April '79)	(Mar. '79)	(April '78)		(April '79)	(April '78)	
Crude Oil Production (thous. of bbls.)	2,343.5	2,444.5	2,576.7	-9.1	2,911	2,787.0	4.4
Natural Gas Production (mil. of cu. ft.)	6,453.3	6,698.3	6,149.0	4.9	6,362	6,780	-4.4
Coal (thous. short tons)	885	1,194	1,105	-19.9	945	731	29.3
Copper (thous. metric tons) ^f	16,199	16,185	19,020	-14.8	15,977	16,321	-2.1

Utah Business Statistics

MCD* Statistical Data				% Chg.	12 Mo. Average Ending		
	May 1979	April 1979	May 1978	From Year Ago	May 1979	May 1978	% Chg
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non Ag. Employment (thous.)*	395.9	392.5	372.9	6.2	384.4	358.8	7.1
Auth. Permit Construction (thous.)*	89.2	87.2	72.7	22.7	62.0	59.7	3.9
New Dwelling Units	1,047	1,267	1,514	-30.8	987	1,287	-23.3
Postal Receipts (thous.)	3,939.8	4,087.3	3,528.1	11.7	4,089.1	3,550.9	15.2
Electric Customers (Residential)	260,677	260,105	248,884	4.7	255,239	242,979	5.0
Electric Customers (Commercial)	20,610	20,563	19,624	5.0	20,191	18,850	7.1
Natural Gas Customers (Residential)	267,225	269,015	252,462	5.8	260,232	246,570	5.5
Natural Gas Customers (Industrial)	481	480	500	-3.8	482	490	-1.6
Department Store Sales (mil. of dol.)	24,523	23,123	23,653	3.7	25,759	24,757	4.0
Salt Lake City							
Non Ag. Employment (Salt Lake and Tooele) (thous.)*	290.1	288.2	274.1	5.8	283.4	267.4	6.0
Auth. Permit Construction (thous.)	16,372.2	17,696.7	5,991.7	173.2	8,934.7	7,818.6	13.9
New Dwelling Units	27	59	31	-12.9	51	85	-40.0
Postal Receipts (thous.)	3,318.9	3,404.3	2,927.4	13.4	3,359.4	2,928.5	14.7
Natural Gas Customers (Residential)	56,952	57,503	56,085	1.5	56,596	55,585	1.8
Natural Gas Customers (Industrial)	178	179	186	-8.6	181	180	-0.5
Telephones in Service. (Business) ^g	202,001	201,923	192,362	5.0	198,148	188,268	5.2
Telephones in Service. (Residential) ^g	40,731	40,437	38,953	4.6	39,758	37,804	5.2
Ogden							
Non Ag. Employment (Weber, Morgan, Davis) (thous.)	96.0	94.8	90.4	6.2	92.9	88.7	4.7
Auth. Permit Construction (thous.)	4,805.3	13,268.1	4,682.3	2.6	4,823.4	2,649.2	82.1
New Dwelling Units	53	43	26	103.8	38	30	26.7
Postal Receipts	290.9	325.8	263.5	10.4	317.5	278.9	13.8
Natural Gas Customers (Residential)	21,346	21,483	21,059	1.3	21,142	21,026	0.5
Natural Gas Customers (Industrial)	63	63	69	-8.6	64	70	-8.5
Telephones in Service. (Business) ^h	41,594	41,589	40,150	3.6	41,033	39,569	3.7
Telephones in Service. (Residential) ^h	6,711	6,737	6,425	4.5	6,601	6,362	3.8
Mountainland (Utah, Wasatch, Summit Counties)							
Non Ag. Employment (thous.)*	68.5	71.1	64.2	6.7	68.1	63.5	7.2
Auth. Permit Construction (thous.)*	21.2	19.7	21.4	-0.9	17.8	17.2	3.5
New Dwelling Units	310	309	483	-35.8	284	380	-25.3
Postal Receipts (thous.)*	496.7	497.1	391.5	26.9	488.1	397.7	22.7
Electric Customers (Residential)	30,975	30,967	29,085	6.5	30,386	28,129	8.0
Electric Customers (Commercial)	2,923	2,892	2,704	8.1	2,810	2,576	9.1
Natural Gas Customers (Residential)	55,796	56,754	51,985	7.3	54,238	50,676	7.0
Natural Gas Customers (Industrial)	99	98	100	-1.0	96	98	-2.0
Provo							
Non Ag. Employment (thous.) (Utah Co.)*	72.8	74.9	68.1	6.9	72.4	67.4	7.4
Auth. Permit Construction (thous.)*	5,465.4	2,340.5	4,669.1	17.1	5,165.9	2,198.6	135.0
New Dwelling Units	71	57	96	-26.0	81	59	37.3
Postal Receipts (thous.)	293.0	303.3	235.7	24.3	296.6	244.0	21.6
Natural Gas Customers (Residential)	14,579	15,207	13,785	5.7	14,357	13,742	4.4
Natural Gas Customers (Industrial)	48	48	48	0	47	47	0
Telephones in Service. (Business) ⁱ	34,638	34,573	32,724	5.8	35,897	33,727	6.4
Telephones in Service. (Residential) ⁱ	6,027	6,042	5,938	1.5	6,048	5,724	5.7
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non Ag. Employment (thous.)*	13.2	12.6	12.2	8.2	12.5	11.6	7.8
Auth. Permit Construction (thous.)*	4.0	1.8	2.6	53.8	2.2	2.1	4.8
New Dwelling Units	59	39	37	59.5	46	44	4.5
Postal Receipts (thous.)	26.7	32.3	18.5	44.3	26.3	20.6	27.7
Electric Customers (Residential)	8,644	8,609	8,276	4.4	8,496	8,144	4.3
Electric Customers (Commercial)	1,909	1,904	1,948	-2.0	1,917	1,796	6.7
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non Ag. Employment (thous.)*	11.1	10.8	10.4	6.7	10.7	9.9	8.1
Auth. Permit Construction (thous.)*	4.7	1.9	1.2	291.7	2.5	1.8	38.9
New Dwelling Units	66	24	18	266.7	33	35	-5.7
Postal Receipts (thous.)	30.1	39.8	28.9	4.2	36.7	31.3	17.3
Electric Customers (Residential)	4,639	4,647	4,382	5.9	4,518	4,232	6.8
Electric Customers (Commercial)	750	745	716	4.7	736	667	10.3
Natural Gas Customers (Residential)	5,153	5,213	5,056	1.9	5,134	4,950	3.7
Natural Gas Customers (Industrial)	8	8	8	-0	8	9	-1.1
Bear River (Box Elder, Cache, Rich Counties)							
Non Ag. Employment (thous.)*	31.0	30.7	29.4	5.4	29.9	28.3	5.7
Auth. Permit Construction (thous.)*	4.5	2.8	5.7	-21.1	4.8	3.9	23.1
New Dwelling Units	97	55	115	-15.7	74	92	-19.6
Postal Receipts (thous.)	154.4	185.0	147.0	5.0	175.9	153.4	14.7
Electric Customers (Residential)	13,648	13,588	13,164	3.7	13,435	12,897	4.2
Electric Customers (Commercial)	1,696	1,678	1,650	2.8	1,670	1,591	5.0
Natural Gas Customers (Residential)	23,345	23,505	22,491	3.7	22,962	22,049	4.0
Natural Gas Customers (Industrial)	49	47	49	-0	48	48	-0
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non Ag. Employment (thous.)*	20.2	19.7	18.9	6.9	19.0	16.9	12.4
Auth. Permit Construction (thous.)*	3.7	1.5	4.0	-7.5	2.0	3.3	-39.4
New Dwelling Units	52	32	45	15.6	36	43	-16.3
Postal Receipts (thous.)	na	na	48.5	x	na	na	x
Electric Customers (Residential)	10,448	10,428	9,842	6.2	10,223	9,538	7.2
Electric Customers (Commercial)	1,388	1,387	1,328	4.5	1,367	1,256	8.8
Natural Gas Customers (Residential)	8,149	8,247	7,858	3.7	8,003	7,725	3.5
Natural Gas Customers (Industrial)	13	12	12	8.3	12	12	-0
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non Ag. Employment (thous.)*	16.3	15.8	15.4	5.8	15.5	14.5	6.9
Auth. Permit Construction (thous.)*	4.3	4.8	5.7	-24.6	4.6	4.0	15.0
New Dwelling Units	83	143	111	-25.2	103	90	14.4
Postal Receipts (thous.)	77.7	83.5	68.8	12.9	80.5	68.3	17.9
Electric Customers (Residential)	10,005	9,954	9,439	6.0	9,833	8,960	9.7
Electric Customers (Commercial)	2,375	2,360	2,027	17.2	2,349	2,097	12.0

Department of Energy is the source for the coal production data. The U.S. Department of the Interior, Bureau of Mines, in *Mineral Industry Surveys* reports copper production.

Cooperation Acknowledged

The Bureau of Economic and Business Research depends upon the cooperation of a significant number of private firms and public agencies in compiling the UEBR statistics. Appreciation is expressed for past cooperation and continued assistance in carrying out this program.

The editors of the *Utah Economic and Business Review* have benefited greatly from the helpful support of the *Review* subscribers. Additional comments and suggestions are welcomed.

A historical series on the data published in the *Review* is contained in the *Statistical Abstract of Utah*, published every three years by the Bureau. In addition to published data, the Bureau maintains substantial files on computer and microfiche, and responds to requests for information not regularly published. The telephone number is 801-581-6333.

BUSINESS STATISTICS Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices:
U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
Savings, Savings and Loan Association: Utah savings and loan institutions
U.S. Savings Bonds: U.S. Treasury Department
New Corporations: Utah Secretary of State
Tax Collections: Utah State Tax Commission
Employment data: Utah Department of Employment Security
Construction: Dodge Construction Statistics and BEBR
Air Passengers: Salt Lake International Airport, statistics service
Traffic Count: Utah Department of Transportation, Travel Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest Service; Utah State Parks and Recreation Department

Footnotes:

- * May not add to total due to rounding
- ^aEnd of Period, includes member banks of Federal Reserve System
- ^bAs of the close of business on last day of the month
- ^cIncludes nonprofit and religious
- ^dIncludes public schools and colleges
- ^eTotal new construction plus additions, alterations and repairs
- ^fBeginning January 1979, data reported in metric tons; to convert metric tons to short tons, multiply by 1.10231.
- ^gIncludes Salt Lake County and Bountiful
- ^hIncludes Weber and Morgan Counties
- ⁱIncludes Orem and Springville

UTAH ECONOMIC AND BUSINESS REVIEW

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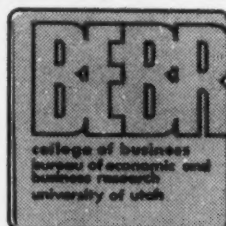
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BUREAU OF ECONOMIC AND BUSINESS RESEARCH
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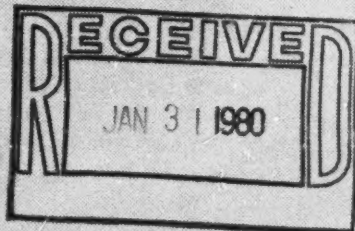
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Municipal Government Expenditures in Utah

by Randy Rogers, Research Analyst

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A great deal of attention has been focused in recent months on taxes and expenditures at all levels of government. Concern appears to be mounting as to the level and composition of government finances. This issue of the *Utah Economic and Business Review* takes a look at municipal expenditures in Utah with particular emphasis on cities with populations of 10,000 or more.

Expenditures of all municipalities in Utah in 1977 totaled \$149.4 million, according to the *Census of Governments*.¹ This total is slightly more than double the figure reported in the 1972 *Census of Governments* data. Even adjusting for inflation and increases in population the 1977 figure is 30 percent higher than the 1972 total. The sharp increase in expenditures between 1972 and 1977 contrasts with the modest 7.9 percent increase (measured in real per capita dollars) from the 1967 Census to 1972. Table 1 shows total general expenditures of all municipalities in Utah for 1967, 1972, and 1977 together, with figures adjusted for inflation and population growth.

Table 1

TOTAL MUNICIPAL GOVERNMENT EXPENDITURES IN UTAH

	1967	1972	1977
Total General Expenditures (thousands of dollars)	\$42,079	\$69,277	\$149,416
Total General Expenditures in 1972 dollars ^a (thousands of dollars)	58,040	69,277	101,574
Expenditures per capita ^b (in 1972 dollars)	82.06	88.51	115.07

^aFigures adjusted by Implicit GNP Price Deflator for state and local government expenditures.

^bPopulation estimated by BEBR based on U.S. Bureau of Census reports.

Source: U.S. Bureau of the Census, *Census of Governments*, 1967, 1972, and 1977, Vol. 4, No. 4.

¹U.S. Bureau of the Census, *1977 Census of Governments*, Vol. 4, No. 4, (Washington, D.C.: Government Printing Office, 1979).

The source of the recent increase in municipal expenditures cannot be clearly attributed to any of the expense categories other than, perhaps, sewerage. However, even this item, which increased from 5.3 percent of total expenditures in 1972 to 11.3 percent in 1977, is less suspect when the facts show that the 1977 proportion merely rebounded to the approximate level of 1967 (Tables 2 and 3). The increase in 1977 represents, rather, a general surge in the costs and presumably the levels of municipal government services.

Table 2

**MUNICIPAL GOVERNMENT EXPENDITURES
IN UTAH**
(thousands of dollars)

	1967	1972	1977
General Expenditures.	\$42,079	\$69,277	\$149,416
Library	1,028	1,462	2,683
Health and Hospitals	1,545	1,925	3,827
Highways	6,125	9,445	20,430
Other Transportation	—	—	6,714
Police Protection	5,434	10,790	23,954
Fire Protection	3,723	6,122	12,823
Other Public Safety	—	—	1,600
Sewerage	4,503	3,669	16,872
Sanitation	1,961	3,076	5,717
Parks and Recreation	3,350	6,104	12,441
Government Administration	4,876	7,779	16,861
Interest on Debt	1,242	2,024	2,886
Other	8,291	16,882	22,608

Source: U.S. Bureau of the Census, *Census of Governments*, 1967, 1972, and 1977, Vol. 4, No. 4.

Table 3

**PERCENT DISTRIBUTION OF ALL MUNICIPAL
EXPENDITURES IN UTAH**

	1967	1972	1977
General Expenditures:	100.0	100.0	100.0
Library	2.4	2.1	1.8
Health and Hospitals	3.7	2.8	2.6
Highways	14.6	13.6	13.7
Other Transportation	—	—	4.5
Police Protection	12.9	15.6	16.0
Fire Protection	8.8	8.8	8.6
Other Public Safety	—	—	1.1
Sewerage	10.7	5.3	11.3
Sanitation	4.7	4.4	3.8
Parks and Recreation	8.0	8.8	8.3
Government Administration	11.6	11.2	11.3
Interest on Debt	3.0	2.9	1.9
Other	19.7	24.4	15.1

Source: U.S. Bureau of the Census, *Census of Governments*, 1967, 1972, and 1977, Vol. 4, No. 4.

Several trends are apparent from Table 3. Total municipal expenditures for libraries, health and hospitals, and sanitation are accounting for a decreasing proportion of the budget. On the other hand, police protection is emerging as a higher priority to city governments in the state. Expenditures in this category accounted for 16.0 percent of all expenditures in 1977 compared with just 12.9 percent in 1967 and 15.6 percent in 1972.

Expenditures by Municipality, 1977

The 1977 *Census of Governments* also reveals some interesting differences in the costs and priorities of municipalities with populations in excess of 10,000 in Utah. An extract of the Census is presented in Table 4 and shows expenditures in 14 categories for the 18 largest cities in the state for fiscal year 1977 together with preliminary 1977 Bureau of Census population estimates.²

Table 5 shows the expenditure data on a per capita basis. While this measure is useful for comparison, the reader should be cautioned against drawing conclusions as to the efficiency or inefficiency of city government based on this data alone. Expenditures per capita measures costs on a per resident basis only and does not take into account costs imposed by other users of government services (and sources of revenue) such as employees, shoppers, businesses, tourists, etc. The per capita measure also does not consider economies (or diseconomies) of scale. Likewise, differences in tax base and yields are not apparent from this data alone.

Nevertheless, the per capita expenditure data does reveal the general shape of the priorities of the respective city governments. Indeed, vast differences in priorities are reflected in the figures.

Table 6 ranks the 18 cities by total general expenditures per capita. Provo's number one ranking is somewhat of an aberration due to 1) abnormally high capital outlays for sewerage for that particular year, and 2) a relatively high student population, most of which is excluded from the population estimates made as of July 1.

Tables 7 through 9 highlight three categories of expenditures per capita: police, parks and recreation, and general government administration. Here the differences in priorities between cities is readily apparent. For example, the community of South

²U.S. Bureau of the Census, Preliminary Population Estimates; unpublished data.

Ogden spends over four times as much on police protection as on parks and recreation, while Bountiful spends more on parks and recreation than police. Brigham City spends nearly seven times as much per capita on parks and recreation as does Orem.

City government administration costs vary immensely from one community to another. Brigham

City and Murray are most costly at \$45.11 and \$33.85 per capita, respectively. Springville and West Jordan administration costs were lowest at \$3.87 and \$9.47, respectively.

Once again, these figures say nothing of the comparative level of services, only the comparative level of expenditures.

Table 4
TOTAL GOVERNMENT EXPENDITURES FOR UTAH'S 18 LARGEST CITIES, 1977
(thousands of dollars)

	American Fork	Bountiful	Brigham City	Cedar City	Clearfield	Layton	Logan	Murray	Ogden
General Expenditures:	\$1,107	\$3,392	\$2,234	\$2,088	\$1,152	\$2,071	\$3,849	\$5,099	\$11,962
Library	54	—	19	48	—	—	74	155	—
Health & Hospital	2	—	—	—	—	—	—	—	11
Highways	170	583	382	335	86	329	595	551	953
Other Transportation	2	—	5	57	—	—	25	—	119
Police Protection	176	486	364	277	340	350	480	912	1,792
Fire Protection	21	112	38	74	67	72	473	394	1,720
Other Public Safety	—	—	36	164	27	76	63	65	98
Sewerage	119	142	56	568	125	395	42	1,222	739
Capital Outlay	27	73	—	504	—	271	—	633	135
Sanitation	72	163	75	101	72	92	431	135	626
Parks and Recreation	187	555	431	188	191	418	385	445	1,288
Government Administration	135	552	655	212	186	232	446	920	1,188
Interest on Debt	106	59	173	64	58	107	124	—	71
Other	63	740	—	—	—	—	711	300	3,357
Population 1977	11,464	31,830	14,521	10,960	13,659	18,386	24,259	27,178	68,512

	Orem	Provo	Roy	Salt Lake City	Sandy	South Ogden	Springville	Tooele	West Jordan
General Expenditures:	\$4,899	\$18,306	\$1,759	\$47,954	\$2,546	\$998	\$1,294	\$1,559	\$1,240
Library	195	300	—	1,594	—	—	78	38	—
Health and Hospital	—	13	—	—	—	—	—	—	—
Highways	1,186	1,265	295	6,658	327	106	313	253	256
Other Transportation	—	85	—	6,396	—	—	2	—	—
Police Protection	775	1,214	392	9,207	353	269	217	327	264
Fire Protection	555	860	72	6,336	295	56	60	38	—
Other Public Safety	64	96	—	451	74	16	13	49	59
Sewerage	167	9,079	91	1,153	73	110	122	129	111
Capital Outlay	36	8,678	—	40	—	—	—	5	—
Sanitation	346	558	130	1,394	168	64	90	102	137
Parks and Recreation	185	1,055	310	2,661	480	60	197	270	92
Government Administration	1,047	257	426	3,838	549	221	42	137	172
Interest on Debt	79	449	43	1,455	21	3	3	—	15
Other	300	201	—	6,811	206	90	157	216	134
Population 1977	42,377	57,418	17,959	167,404	34,006	10,487	10,862	13,368	18,167

Source: U.S. Bureau of the Census, 1977 *Census of Governments*, Vol. 4, No. 4, (Washington, D.C.: Government Printing Office, 1979).

Table 5

**MUNICIPAL GOVERNMENT EXPENDITURES PER CAPITA, 1977
FOR UTAH'S 18 LARGEST CITIES**

	American Fork	Bountiful	Brigham City	Cedar City	Clearfield	Layton	Logan	Murray	Ogden
General Expenditures:	\$ 96.56	\$ 106.57	\$ 153.85	\$ 190.51	\$ 84.34	\$ 112.64	\$ 158.66	\$ 187.61	\$ 174.60
Library	4.71	—	1.31	4.38	—	—	3.05	5.70	—
Health and Hospital	.17	—	—	—	—	—	—	—	.16
Highways	14.83	18.32	26.31	30.57	6.30	17.89	24.58	20.27	13.91
Other Transportation	.17	—	.34	5.20	—	—	1.03	—	1.74
Police Protection	15.35	15.27	25.07	25.27	24.89	19.04	19.79	33.56	26.16
Fire Protection	1.83	3.52	2.62	6.75	4.91	3.92	19.50	14.50	25.11
Other Public Safety	—	—	2.48	14.96	1.98	4.13	2.60	2.39	1.48
Sewerage	10.38	4.46	3.86	51.82	9.15	21.48	1.73	44.63	10.79
Capital Outlay	2.36	2.29	—	45.99	—	14.74	—	34.33	1.97
Sanitation	6.28	5.12	5.16	9.22	5.27	5.00	17.77	4.97	9.14
Parks and Recreation	16.31	17.44	29.68	17.15	13.98	22.73	15.87	16.37	18.80
Government Administration	11.78	17.34	45.11	19.34	13.62	12.62	18.38	33.85	17.34
Interest on Debt	9.25	1.85	11.91	5.84	4.25	5.82	5.11	—	1.04
Other	5.50	23.25	—	—	—	—	29.31	11.04	49.00

	Orem	Provo	Roy	Salt Lake City	Sandy	South Ogden	Springville	Tooele	West Jordan
General Expenditures:	\$ 115.61	\$ 318.82	\$ 97.95	\$ 286.46	\$ 74.87	\$ 95.17	\$ 119.13	\$ 116.62	\$ 68.26
Library	4.60	5.22	—	9.52	—	—	7.18	2.84	—
Health and Hospital	—	.23	—	—	—	—	—	—	—
Highways	27.99	22.03	16.43	39.77	9.62	10.11	28.82	18.93	14.09
Other Transportation	—	1.48	—	38.21	—	—	.18	—	—
Police Protection	18.29	21.14	21.83	55.00	10.38	25.65	19.98	24.46	14.53
Fire Protection	13.10	14.98	4.01	37.85	8.67	5.34	5.52	2.84	—
Other Public Safety	1.51	1.67	—	2.69	2.18	1.53	1.20	3.67	3.25
Sewerage	3.94	158.12	5.07	6.89	2.15	10.49	11.23	9.65	6.11
Capital Outlay	.85	151.14	—	.24	—	—	—	.37	—
Sanitation	8.16	9.72	7.24	8.33	4.94	6.10	8.29	7.63	7.54
Parks and Recreation	4.37	18.37	17.26	15.90	14.12	5.72	18.14	20.20	5.06
Government Administration	24.71	15.80	23.72	22.93	16.14	21.07	3.87	10.25	9.47
Interest on Debt	1.86	2.30	2.39	8.69	.62	.29	.28	—	.83
Other	7.10	47.76	—	40.69	6.06	8.58	14.45	16.16	7.38

Source: U.S. Bureau of the Census, 1977 *Census of Governments*, Vol. 4, No. 4, (Washington, D.C.: Government Printing Office, 1979).

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RANKINGS OF UTAH'S 18 LARGEST CITIES SELECTED EXPENDITURE CATEGORIES

Table 6

Total General Expenditures, Per Capita, 1977

1. Provo	\$318.82
2. Salt Lake City	286.46
3. Cedar City	190.51
4. Murray	187.61
5. Ogden	174.60
6. Logan	158.66
7. Brigham City	153.85
8. Springville	119.13
9. Tooele	116.62
10. Orem	115.61
11. Layton	112.64
12. Bountiful	106.57
13. Roy	97.95
14. American fork	96.56
15. South Ogden	95.17
16. Clearfield	84.34
17. Sandy	74.87
18. West Jordan	68.26

Table 7

Police Expenditures, Per Capita, 1977

1. Salt Lake City	\$55.00
2. Murray	33.56
3. Ogden	26.16
4. South Ogden	25.65
5. Cedar City	25.27
6. Brigham City	25.07
7. Clearfield	24.89
8. Tooele	24.46
9. Roy	21.83
10. Provo	21.14
11. Springville	19.98
12. Logan	19.79
13. Layton	19.04
14. Orem	18.29
15. American Fork	15.35
16. Bountiful	15.27
17. West Jordan	14.53
18. Sandy	10.38

Table 8

Parks and Recreation Expenditures, Per Capita, 1977

1. Brigham City	\$29.68
2. Layton	22.73
3. Tooele	20.20
4. Ogden	18.80
5. Provo	18.37
6. Springville	18.14
7. Bountiful	17.44
8. Roy	17.26
9. Cedar City	17.15
10. Murray	16.37
11. American Fork	16.31
12. Salt Lake City	15.90
13. Logan	15.87
14. Sandy	14.12
15. Clearfield	13.78
16. South Ogden	5.72
17. West Jordan	5.06
18. Orem	4.37

Table 9

Government Administration Expenditure Per Capita, 1977

1. Brigham City	\$45.11
2. Murray	33.85
3. Orem	24.71
4. Roy	23.72
5. Salt Lake City	22.93
6. South Ogden	21.07
7. Cedar City	19.34
8. Logan	18.38
9. Bountiful	17.34
10. Ogden	17.34
11. Sandy	16.14
12. Provo	15.80
13. Clearfield	13.62
14. Layton	12.62
15. American Fork	11.78
16. Tooele	10.25
17. West Jordan	9.47
18. Springville	3.87

Source: U.S. Bureau of the Census, *1977 Census of Governments*, Vol. 4, No. 4, (Washington, D.C.: Government Printing Office, 1979).

Utah Business Statistics

Statewide Statistical Data

	June 1979	May 1979	June 1978	% Chg. From Year Ago	12 Mo. Average Ending		
	June 1979	May 1979	June 1978		June 1979	June 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) [*]	37,263	42,787	30,888	20.6	40,991	31,606	29.7
Livestock and Livestock Products (thous. of dol.)	28,708	31,053	24,435	17.5	32,185	24,540	31.2
Crops (thous. of dol.)	8,555	11,734	6,453	32.6	8,803	7,066	24.6
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	68.5	75.9	52.8	29.7	64.0	42.8	48.6
Lambs (cwt)	61.4	63.5	59.1	3.9	61.0	55.1	11.2
Turkeys (per lb.)	.450	.440	.410	9.8	.483	.39	23.9
Milk, Wholesale (cwt)	11.3	11.4	9.85	14.7	11.0	9.7	13.6
Alfalfa Hay, Baled (per ton)	53.0	52.5	49.0	8.2	49.0	55.1	10.8
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	16,412	15,060	16,893	-2.9	17,358	20,962	-17.2
Calves (thous. of lbs.)	-	-	19	x	-	36	-
Sheep and Lambs (thous. of lbs.)	226	212	191	18.3	214	229	6.2
Hogs and Pigs (thous. of lbs.)	2,318	2,377	1,856	24.9	2,106	2,245	6.2
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,094	2,954	2,785	11.1	2,946	2,573	14.5
Investments, Total, Utah Member Banks (mil. of dol.) ^a	826	849	755	9.4	813	741	9.7
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,789	3,799	3,559	6.5	3,701	3,287	12.6
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	61	57	51	19.6	55	53	3.5
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,177	1,153	1,143	2.5	1,148	1,082	6.1
Time Deposits, Total, Utah (mil. of dol.) ^a	2,556	2,589	2,365	8.0	2,499	2,154	16.0
Savings, Savings and Loan Association (mil. of dol.) ^b	1,622.6	1,589.0	1,412.1	14.9	1,520	1,392.1	9.2
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	2,319.0	2,617.0	2,386.4	-2.8	2,280.0	2,768.1	-17.6
New Corporations (no.)	411	429	431	-4.6	410	378	8.6
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	40,499.6	159,557.2	39,610.0	2.3	67,354	57,667.2	16.8
Sales & Use Tax	48,077.4	35,222.6	2,501.2	1,822.2	30,123	26,206.8	14.9
Motor Fuel Tax	4,048.9	9,187.4	7,259.3	-44.2	5,342	4,240.8	26.0
Individual Income Tax	20,095.1	55,861.7	17,041.3	17.9	22,231	17,764.0	25.2
Corporation Franchise Tax	1,179.8	7,860.6	1,466.0	-19.5	3,155	2,755.2	14.5
Employment							
Civilian Labor Force (thous.) ^c	636.1	615.4	600.5	5.9	605	569.1	6.3
Total Employed Persons	601.9	592.0	568.7	5.8	577	541.0	6.7
Unemployed	34.2	23.4	31.8	7.6	28.0	28.1	-4
Percent Total Labor Force	5.4	3.8	5.3	1.9	4.6	4.9	-6.1
Employees on Nonagricultural Payrolls (thous. of jobs)	561.6	556.3	528.8	6.2	541	506.3	6.9
Manufacturing	85.6	84.5	79.6	7.5	83	76.6	8.9
Mining	17.9	17.6	16.4	9.2	17	14.8	15.0
Contract Construction	40.1	36.8	37.9	5.8	36	33.9	5.6
Transportation, Communication and Utilities	35.1	34.1	32.2	9.0	33	30.4	8.4
Wholesale Trade	35.5	34.7	32.3	9.9	33	30.1	10.2
Retail Trade	100.2	98.9	96.4	3.9	98	92.9	5.5
Finance, Insurance and Real Estate	26.4	25.9	24.7	6.9	25	23.4	7.9
Services ^d	98.9	96.0	90.2	9.7	95	86.8	9.4
Federal Government	37.2	37.0	37.6	-1.1	37	36.7	.2
State Government ^e	29.1	31.6	29.6	-1.7	32	30.6	3.1
Local Government ^e	55.5	58.0	51.8	7.1	54	49.5	8.9
Average Weekly Hours:							
Manufacturing	38.6	38.2	39.5	-2.3	39.1	39.8	-1.8
Mining	41.6	39.6	43.0	-3.3	41.9	42.4	-1.2
Contract Construction	38.0	36.8	39.2	-3.1	37.8	41.2	-8.3
Wholesale Trade	38.0	37.1	37.1	2.4	37.4	35.9	4.2
Retail Trade	27.9	27.5	28.1	-7	28.0	29.2	-4.1
Amount of Unemployment Comp. (thous. of dol.)	2,820.1	3,701.3	2,534.9	11.3	3,769.0	3,241.8	16.3
Construction							
Total Construction (thous. of dol.)	182,024	123,543	144,518	25.9	115,088	99,440	15.7
Residential	83,998	78,749	73,719	13.9	60,902	58,434	4.2
Nonresidential	75,687	29,935	55,365	36.7	39,145	30,249	29.4
Public Works and Utilities	22,339	14,859	15,434	44.7	15,041	10,757	39.8
Total Permit Construction (thous. of dol.) ^f	126,498.4	131,571.8	114,660.9	10.3	97,151	92,506.9	5.0
Residential	71,399.3	72,888.8	71,315.6	.12	56,828	63,605.2	-10.6
Nonresidential	48,723.7	50,939.2	36,781.7	32.5	34,091	23,039.2	48.0
Additions, Alterations and Repairs	6,375.4	7,743.8	6,563.6	-2.9	5,958	5,862.6	1.6
New Dwelling Units (no.)	1,805	1,714	1,963	-8.1	1,550	1,941.4	-20.2
Tourism/Travel							
Air Passengers (total no. on and off)	415,805	351,477	389,983	6.6	374,951	329,469	13.8
Highway Traffic Count Across State Lines	46,988	37,729	56,516	-16.9	41,579	42,032	-1.1
Transient Room Taxes (thous. of dol.)	447.3	143.8	7.4	5,944.6	175.0	145.4	20.1
Visits, State, Nat'l. Parks, Monuments (thous.)	2,089.7	1,297.2	2,441.9	-14.4	1,082	1,101.5	-1.8
General							
New Cars and Truck Sales	na	na	na	-	na	na	-
C.P.I. (National Index - 1967=100)	216.6	214.1	195.3	10.9	205.0	187.6	9.4
Telephones in Service. (Business)	73,742	73,180	69,918	5.5	71,896	68,056	5.6
Telephones in Service. (Residential)	392,375	391,079	372,202	5.4	387,435	367,292	5.5
Electric Customers (Commercial)	31,711	31,651	30,387	4.4	31,151	29,036	7.3
Electric Customers (Residential)	339,354	339,036	323,257	5.0	333,471	316,416	5.4
Natural Gas Customers (Residential & Commercial)	450,376	452,545	432,094	4.4	444,238	423,955	4.8
Natural Gas Customers (Industrial)	859	939	928	-7.4	932	958.6	-2.7
Production							
Net Electric Power Utilized (mil. of kwh)	1,037.5	939.3	961.5	7.9	973	876.0	11.1
Crude Oil to Refineries (thous. of bbls.)	4,907.3	4,912.7	5,200.4	-5.6	5,010	5,138.0	-2.5
	(May 1979)(April 1979)	(May 1978)			(May 1979)(May 1978)		
Crude Oil Production (thous. of bbls.)	2,285.4	2,343.5	3,007.8	-24.0	2,851.0	2,793.6	2.0
Natural Gas Production (mil. of cu. ft.)	5,912.6	6,453.3	6,768.9	-12.6	6,291	6,778.2	-7.2
Coal (thous. short tons)	1,028	885	879	17.0	957	747	28.2
Copper (thous. metric tons) ^g	17,012	16,199	19,020	-10.6	15,810	16,262	-2.8

Utah Business Statistics

MCD* Statistical Data

	June 1979	May 1979	June 1978	% Chg. From Year Ago	12 Mo. Average Ending		
					June 1979	June 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non Ag. Employment (thous.)*	399.9	395.9	376.6	6.2	386	361.0	7.0
Auth. Permit Construction (mil. of dol.)	88.7	89.2	76.3	16.2	63	60.4	4.4
New Dwelling Units	1,140	1,047	1,213	6.0	931	1,254	21.8
Postal Receipts (thous.)	3,714.0	4,029.4	3,783.8	1.8	4,083.3	3,570.3	14.4
Electric Customers (Residential)	260,666	260,677	248,850	4.7	256,224	244,000	5.0
Electric Customers (Commercial)	20,661	20,610	19,718	4.8	20,270	18,962	6.9
Natural Gas Customers (Residential)	266,543	267,225	253,234	5.3	261,341	247,650	5.5
Natural Gas Customers (Industrial)	438	481	477	8.2	479	489	2.1
Department Store Sales (mil. of dol.)	24,330	24,523	23,859	2.0	25,798	24,683	4.5
Salt Lake City							
Non Ag. Employment (Salt Lake and Tooele) (thous.)*	298.2	290.1	280.7	6.2	285	268.6	6.0
Auth. Permit Construction (mil. of dol.)	15.7	16.4	7.7	103.9	9.6	7.8	23.1
New Dwelling Units	12	27	35	65.7	49.1	81	39.4
Postal Receipts (thous.)	3,056.2	3,318.9	3,096.9	1.3	3,356.0	2,942.5	14.1
Natural Gas Customers (Residential)	56,796	56,952	56,356	8	56,633	55,664	1.7
Natural Gas Customers (Industrial)	161	178	180	10.6	179.4	180	3
Telephones in Service (Business)	40,950	40,731	39,030	4.9	39,918	37,988	5.1
Telephones in Service (Residential)	202,541	202,001	192,614	5.2	198,975	189,013	5.3
Ogden							
Non Ag. Employment (Weber, Morgan, Davis) (thous.)	97.2	96.0	97.2	0.0	92.9	89.7	3.6
Auth. Permit Construction (mil. of dol.)	15.7	4.8	2.7	481.5	5.9	2.8	110.7
New Dwelling Units	87	53	19	357.9	43.7	29	50.7
Postal Receipts	291.7	290.9	318.3	8.4	315.3	282.2	11.7
Natural Gas Customers (Residential)	21,132	21,346	20,963	8	21,156.1	21,025	6
Natural Gas Customers (Industrial)	59	63	64	7.8	63.6	70	9.1
Telephones in Service (Business)	6,798	6,711	6,388	6.4	6,635	6,374	4.1
Telephones in Service (Residential)	41,638	41,594	40,246	3.5	41,149	39,683	3.7
Mountainland (Utah, Wasatch, Summit Counties)							
Non Ag. Employment (thous.)*	69.7	68.5	65.4	6.6	68.5	64.0	7.0
Auth. Permit Construction (mil. of dol.)	16.7	21.2	23.0	27.4	17.3	17.1	1.2
New Dwelling Units	338	310	396	14.6	279.2	383	27.1
Postal Receipts (thous.)	505.1	509.1	465.6	8.5	491.4	403.4	21.8
Electric Customers (Residential)	31,038	30,975	29,220	6.2	30,538	28,410	7.5
Electric Customers (Commercial)	2,907	2,923	2,714	7.1	2,826	2,603	8.6
Natural Gas Customers (Residential)	55,341	55,796	51,969	6.5	54,519	50,966	7.0
Natural Gas Customers (Industrial)	90	99	95	5.3	96	98	2.4
Provo							
Non Ag. Employment (thous.) (Utah Co.)*	64.2	61.2	60.0	7.0	72.8	58.8	23.8
Auth. Permit Construction (mil. of dol.)	3.7	5.5	4.3	14.0	5.2	2.3	126.1
New Dwelling Units	79	71	97	18.6	79.5	61	30.3
Postal Receipts (thous.)	340.8	293.0	274.9	24.0	302.1	246.6	22.5
Natural Gas Customers (Residential)	14,538	14,579	13,886	4.7	14,411.3	13,795	4.5
Natural Gas Customers (Industrial)	44	48	48	8.3	47	47	6
Telephones in Service (Business)	6,057	6,027	5,964	1.6	6,056	5,765	5.0
Telephones in Service (Residential)	34,946	34,638	32,929	6.1	36,065	33,913	6.3
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non Ag. Employment (thous.)*	12.5	13.2	12.5	8.0	12.6	11.7	7.7
Auth. Permit Construction (mil. of dol.)	2.2	4.0	2.5	12.0	2.2	2.2	0.0
New Dwelling Units	46	59	53	13.2	45	44	3.2
Postal Receipts (thous.)	63.1	61.9	65.6	3.8	63.9	60.2	6.1
Electric Customers (Residential)	8,685	8,644	8,329	4.3	8,526	8,170	4.4
Electric Customers (Commercial)	1,910	1,909	1,950	2.1	1,914	1,814	5.5
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non Ag. Employment (thous.)*	11.6	11.1	10.8	7.4	10.8	10.0	8.0
Auth. Permit Construction (mil. of dol.)	1.7	4.7	2.0	15.0	2.5	1.8	38.9
New Dwelling Units	38	66	47	19.1	32	35	7.7
Postal Receipts (thous.)	43.5	34.5	41.3	5.3	36.9	32.1	15.0
Electric Customers (Residential)	4,668	4,679	4,379	6.6	4,542	4,256	6.7
Electric Customers (Commercial)	761	750	727	4.7	739	674	9.6
Natural Gas Customers (Residential)	5,096	5,153	5,048	1.0	5,138	4,968	3.4
Natural Gas Customers (Industrial)	7	8	7	0.0	8	9	11.1
Bear River (Box Elder, Cache, Rich Counties)							
Non Ag. Employment (thous.)*	30.7	31.0	29.2	5.1	30.0	28.4	5.6
Auth. Permit Construction (mil. of dol.)	5.4	4.5	5.6	3.6	4.8	4.0	20.0
New Dwelling Units	89	97	145	38.6	69.3	95	27.1
Postal Receipts (thous.)	187.6	162.2	178.8	4.9	176.6	155.5	13.6
Electric Customers (Residential)	13,677	13,648	13,210	3.5	13,474	12,948	4.1
Electric Customers (Commercial)	1,696	1,696	1,667	1.7	1,672	1,601	4.5
Natural Gas Customers (Residential)	23,489	23,345	22,756	3.2	23,023	22,134	4.0
Natural Gas Customers (Industrial)	47	49	46	2.2	48	48	2
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non Ag. Employment (thous.)*	20.1	20.2	18.8	6.9	19.1	17.1	11.7
Auth. Permit Construction (mil. of dol.)	6.9	3.7	2.3	200.0	2.4	3.3	27.3
New Dwelling Units	36	52	38	5.3	35.8	42	14.8
Postal Receipts (thous.)	na	na	na	na	na	na	na
Electric Customers (Residential)	10,493	10,448	9,869	6.3	10,275	9,595	7.1
Electric Customers (Commercial)	1,391	1,388	1,349	3.1	1,370	1,268	8.1
Natural Gas Customers (Residential)	8,041	8,149	7,882	2.0	8,016	7,754	3.4
Natural Gas Customers (Industrial)	13	13	11	18.2	12.2	12	1.7
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non Ag. Employment (thous.)*	16.3	16.3	15.5	5.2	15.6	14.6	6.8
Auth. Permit Construction (mil. of dol.)	4.8	4.3	3.0	60.0	4.8	3.8	26.3
New Dwelling Units	69	83	71	2.8	102.8	89	15.5
Postal Receipts (thous.)	91.4	90.0	82.2	11.2	81.3	69.5	17.0
Electric Customers (Residential)	10,127	10,005	9,400	7.7	9,894	9,035	9.5
Electric Customers (Commercial)	2,385	2,375	2,262	5.4	2,359	2,116	11.5

SR1

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BUSINESS STATISTICS Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices:
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 Loans, Investments, deposits: Federal Reserve reports
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 Tax Collections: Utah State Tax Commission
 Employment data: Utah Department of Employment
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 Analysis Unit
 Visits to State and National Parks and Monuments: U.S. Forest
 Service; Utah State Parks and Recreation Department
 Truck and car sales: Utah Automobile
 Dealers Registrations Service Company
 Telephone, electric, natural gas customers:
 cooperating Utah utility companies
 Net Electric Power Utilized: cooperating
 Utah power companies
 Crude Oil to Refineries: cooperating
 Utah oil refineries
 Copper production: U.S. Bureau of Mines
 Coal production: U.S. Department of Energy
 Oil and gas production: State of Utah
 Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^a End of Period, includes member banks of Federal Reserve
 System
- ^b As of the close of business on last day of the month
- ^c Current year—preliminary data; previous
 year—final figures.
- ^d Includes nonprofit and religious
- ^e Includes public schools and colleges
- ^f Total new construction plus additions, alterations and
 repairs
- ^g Beginning January 1979, data reported in metric tons; to
 convert metric tons to short tons, multiply by 1.10231
- ^h Includes Salt Lake County and Bountiful
- ⁱ Includes Weber and Morgan Counties
- ^j Includes Orem and Springville
- ^r revised
- ^x increase from zero or decrease to zero
- ^{na} not available

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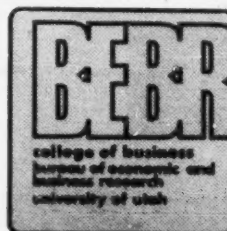
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1979 Population Estimates for Utah

by John E. Brockert,
Gery E. Moore, and Kenneth E. Jensen

The Utah Population Work Committee has estimated that the population of Utah reached 1,367,000 on July 1, 1979. This represents an increase of 50,000 or 3.8 percent over the revised 1978 estimate of 1,317,000. The Committee's preliminary estimate for 1979 is the same as the recently released estimate by the U.S. Bureau of the Census (1,367,000).

Natural increase continues to play a major role in Utah's population growth. However, the Committee did note that the net amount of in-migration continues to increase over prior years. As usual, the bulk of the population increase was centered in the three Wasatch Front Counties of Davis, Salt Lake, and Utah. Salt Lake County gained 19,000, Utah 10,000, and Davis 7,000. These three counties collectively had an increase of 36,000 in population during the 12 months between July 1978 and July 1979, while the balance of the state gained 14,000 persons. Other areas of substantial growth were Box Elder, Carbon, Cache, Emery, Iron, San Juan, Summit, Sevier, Uintah, Weber, and Washington Counties. Chart 1 gives the changes in population for each of the counties in the state. Table 1 shows the total population density of the four Wasatch Front counties and the balance of the state for the years, 1977, 1978, and 1979. Table 2 gives the population of the state by multi-county planning districts for the years 1970 through 1979.

Changes in Utah's Population by County
July 1, 1978 to July 1, 1979

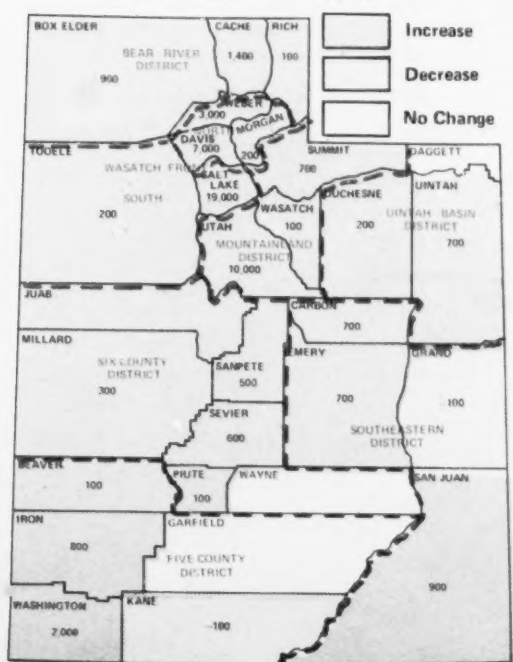


Table 1

**UTAH POPULATION PER SQUARE MILE FOR THE WASATCH FRONT COUNTIES
AND THE BALANCE OF THE STATE
1977, 1978, 1979**

Location	Land Area (sq. mi.) 1970	July 1, 1977		July 1, 1978		July 1, 1979	
		Population Estimate	Population per sq. mi.	Population Estimate	Population per sq. mi.	Population Estimate	Population per sq. mi.
State total	82,096	1,270,000	15.5	1,317,000	16.0	1,367,000	16.7
Wasatch Front							
Counties	3,656	971,000	265.6	1,004,000	274.3	1,043,000	285.3
Davis	297	124,000	417.5	130,000	434.7	137,000	461.3
Salt Lake	764	532,000	696.3	544,000	712.0	563,000	736.9
Utah	2,014	177,000	87.9	189,000	93.8	199,000	98.8
Weber	581	138,000	237.5	141,000	242.7	144,000	247.8
Balance of State	78,440	299,000	3.8	313,000	4.0	324,000	4.1

Sources: Land Area — U.S. Bureau of the Census, "Number of Inhabitants — Utah, 1970"
 State Population — Utah Population Work Committee, U.S. Bureau of the Census estimates.
 Local Population — Utah Population Work Committee.

Table 2

POPULATION ESTIMATES OF UTAH BY MULTI-COUNTY PLANNING DISTRICTS

District	July 1 1970	July 1 1971	July 1 1972	July 1 1973	July 1 1974	July 1 1975	July 1 1976	July 1 1977	July 1 1978	July 1 1979
Total	1,066,000	1,095,000	1,128,000	1,150,000	1,179,000	1,203,000	1,232,000	1,270,000	1,317,000	1,367,000
Bear River	72,300	73,100	76,600	77,600	79,200	80,400	81,800	84,500	87,500	89,900
Wasatch Front										
North	230,350	235,900	244,400	248,000	252,600	255,700	250,800	266,900	276,100	286,300
Wasatch Front										
South	483,000	495,600	504,000	510,300	523,000	531,000	541,700	556,300	568,600	587,800
Mountainland	151,150	156,800	162,600	168,000	173,000	179,300	185,000	191,500	204,700	215,500
Six County	35,400	36,100	37,600	39,700	40,800	41,400	42,400	44,300	46,400	47,900
Five County	35,650	37,300	39,100	40,000	41,300	42,700	44,100	46,500	49,100	51,900
Uintah Basin	20,850	21,900	24,800	27,000	28,300	29,600	29,400	30,200	31,100	32,000
Southeastern	37,200	37,900	38,600	40,100	41,200	42,900	46,800	50,100	53,500	55,700

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Organization and Procedure

The Utah Population Work Committee is made up of representatives from the Utah State Departments of Health, Employment Security, Water Resources, Planning, and Education; and members of local universities, businesses, and research organizations. The Committee's participation in the Federal-State Cooperative Program for Local Population Estimates provides for exchange of data and other information between the Committee and the Bureau of the Census. The intent of this exchange is to improve the quality of the estimates of population for the state and its counties by both parties. Another goal of the Committee is to strive for agreement in the estimates prepared by itself and the Bureau of the Census.

At its November meeting, the Committee reviewed the state population estimates derived from vital statistics, school enrollment data, L.D.S. membership data, and from nonagricultural jobs figures. The preliminary state total for July 1, 1979 was estimated to be 1,367,000, and the revised 1978 estimate was 1,317,000. Preliminary county estimates were reviewed and agreed upon. The chairman was directed to transmit the preliminary estimates to the county commissions and the multi-county planning district directors for their view and input. This resulted in some interesting input from local areas, but failed to alter the Committee's initial estimates.

The Committee's estimates for individual counties will not in some instances agree with Bureau of the Census county estimates, but state totals are in close agreement. The Committee feels that because it has more information available on counties than the Bureau of the Census has, its estimates are more representative of actual county populations. Table 6 represents the revised July 1, 1978 county and state population estimates and the preliminary July 1, 1979 estimates, in addition to the 1970 through 1977 state and county estimates.

Methodology for Estimating Population

The Utah Population Work Committee utilizes several population estimating methods in obtaining its state and county estimates. The committee has found from past experience that an average of two or more population estimating procedures produces more accurate estimates. The 1979 county population estimates, therefore, are basically a weighted average of the school enrollment and L.D.S. membership methods with adjustment of a few counties because of atypical growth experiences of their population.

School Enrollment Method

The Utah Population Work Committee relies heavily upon the school enrollment method. This method utilizes data from the birth and death certificates as a measure of the natural increase and fall school enrollment changes as an indicator of net migration.

Natural Increase

Births minus deaths equals natural increase. The 1979 population estimates are based on the number of resident births and deaths that occurred from 1 July 1978 to 30 June 1979. This is the first time the Committee has had the actual natural increase data for the 12-month period for which the population estimate was being made. However, it must be noted that the natural increase provided by using the provisional 1979 data will tend to slightly overstate the actual natural increase for the 12-month period 1 July 1978 to 30 June 1979. This is due to the fact that out-of-state occurrences of births and deaths to Utah residents are not included in the 1979 natural increase data. Since more than 99 percent of births and over 96 percent of deaths to Utah residents occur in the state, the difference between the actual natural increase and the estimated natural increase should not have any significant effect on the population estimates for the state and counties.

The number of births and deaths occurring to Utah residents for the years 1960-1978 is shown in Table 3. As can be seen, with the exception of 1972, the number of births has been increasing since 1965. With only occasional reversals the number of deaths has been increasing since 1960, as the total population and the over-age-65 population increases.

Net Migration Estimates

Where natural increase is an actual count of the births and deaths that occur annually, migration is an estimate, inasmuch as states and counties do not collect migration statistics. The Utah Population Work Committee, like the Bureau of the Census, relies heavily upon school enrollment data as an indicator of migration.

To estimate net migration within the state and its counties, the Committee compares the survived enrollment in grades one through eight of the previous school year to grades two through nine of the present year. The difference between these two enrollment totals is the net student migration for the area being estimated.

Table 3

RESIDENT UTAH BIRTHS, DEATHS, AND NATURAL INCREASE 1960-1978

Year	Births	Deaths	Natural Increase
1960	26,272	5,997	20,275
1961	25,590	6,081	19,509
1962	26,213	6,325	19,888
1963	24,952	6,544	18,408
1964	23,844	6,404	17,440
1965	22,261	6,672	15,589
1966	22,601	6,850	15,751
1967	22,948	6,516	16,432
1968	23,193	6,882	16,311
1969	24,232	6,791	17,441
1970	26,969	7,063	19,906
1971	27,552	7,245	20,307
1972	26,911	7,323	19,588
1973	27,980	7,576	20,404
1974	29,945	7,380	22,565
1975	31,667	7,519	24,148
1976	35,310	7,472	27,838
1977	37,956	7,612	30,344
1978	38,811	7,871	30,940

Source: Bureau of Health Statistics, Utah State Department of Health, Salt Lake City, 1979.

Total net migration for each county is derived by multiplying the county student migration estimate by the county population-to-student ratio. This ratio is defined as the total population of the county for the previous year divided by the school enrollment of grades one through eight of the previous year. Table 4 shows, for each county, the student and total migration for 1979, and natural increase for 1979.

The preliminary population estimate is finally obtained by adding the annual natural increase to the estimated net migration and then adding this sum to the previous year's estimate. In the case of the 1979 estimate, 12 months of natural increase and net migration were added to the July 1, 1978 figure to obtain the July 1, 1979 estimate.

The school enrollment method as described above is somewhat limited in estimating migration among the retired, college students, single persons, and other groups that are not represented in school enrollment estimates. The Utah Population Work Committee, therefore, supplements its estimates with other migration indicators such as L.D.S. membership and the periodic count of employees on nonagricultural payrolls.

L.D.S. Membership Method

The L.D.S. Church annually audits its records and enumerates the number of members residing in each county of the state. This information is supplied to the Utah Population Work Committee which uses it to make current population estimates. The L.D.S. membership method uses a total population to L.D.S. membership ratio which is obtained by dividing the previous year's population by the L.D.S. membership of that year. This ratio is applied to the current L.D.S. membership to obtain a county population estimate. This method is relatively accurate in areas where the L.D.S. membership is over 75 percent of the population. In 1979 the L.D.S. method gave a slightly higher state total population estimate than the school enrollment method. The stabilization of year-to-year Church population changes is continuing to improve, and in recent years the estimates have been given nearly equal weight with the school enrollment method in producing county estimates in Utah.

Work Force Method

The work force method utilizes the employment data collected by the Utah Department of Employment Security as an indicator of population change. The year-over growth in the number of employees on nonagricultural payrolls is applied to the total population of the previous year to obtain state and county population estimates. This method employs the basic assumptions that (1) relative growth in nonagricultural payroll jobs and population are the same; and (2) economic conditions remain relatively stable from year to year. In periods of economic boom this method will over-estimate population and in periods of economic decline the reverse occurs. Another important assumption is that people live and work in the same county. With the high mobility of the work force in some Wasatch Front counties, this assumption may not be valid. Because of the above-mentioned weaknesses, the estimates provided by this method are subject to wide fluctuation. The work force ratio method is used only as a supplement to the L.D.S. membership and school enrollment methods.

Table 5 contains the results of each method used in arriving at the preliminary 1979 county population estimates. An average of the L.D.S. membership and school enrollment method is found in column six from which the Utah Population Work Committee basically obtained its estimate. Column seven contains the preliminary 1979 population estimates, as agreed upon by the Utah Population Work Committee.

Table 4

**COMPONENTS OF POPULATION CHANGE IN UTAH COUNTIES FROM 1978 TO 1979 AS SHOWN
BY THE SCHOOL ENROLLMENT METHOD**

County	Revised July 1, 1978 Estimate	1978 Grades 1-8	Grades 2-9 Expected	1979 Grades 2-9	Net Student Migration	Net Total Migration	Natural Increase ^a	July 1, 1979 Population Estimate
Total	1,317,000	202,341	201,904	204,175	2,271	14,800	32,162	1,363,962
Beaver	4,300	607	606	616	+10	71	83	4,456
Box Elder	32,100	5,004	4,999	5,041	42	269	647	33,029
Cache	53,600	6,929	6,923	6,965	42	325	1,361	55,307
Carbon	21,300	2,966	2,963	2,922	-41	-294	436	21,450
Daggett	800	118	118	118	-	-	12	812
Davis	130,000	23,004	22,983	23,579	596	3,368	3,295	136,716
Duchesne	11,700	2,171	2,169	2,126	-43	-252	347	11,820
Emery	10,100	1,710	1,708	1,780	+72	425	293	10,822
Garfield	3,800	517	517	508	-9	-66	45	3,783
Grand	8,000	1,226	1,225	1,170	-55	-359	155	7,799
Iron	16,400	2,459	2,457	2,523	66	440	397	17,244
Juab	5,700	879	878	867	-11	-71	115	5,746
Kane	4,000	649	648	616	-32	-197	58	3,862
Millard	8,700	1,411	1,410	1,424	14	86	174	8,963
Morgan	5,100	859	858	889	31	184	77	5,365
Piute	1,400	197	197	216	19	135	14	1,550
Rich	1,800	261	261	270	9	62	39	1,902
Salt Lake	544,000	83,176	83,101	83,452	351	2,262	12,414	558,923
San Juan	14,100	1,923	1,921	2,015	94	689	253	15,048
Sanpete	14,300	2,045	2,043	2,117	74	517	215	15,038
Sevier	14,400	1,893	1,891	1,953	62	472	282	15,160
Summit	8,000	1,368	1,367	1,458	91	532	169	8,704
Tooele	24,600	4,165	4,161	4,112	-49	-289	489	24,810
Uintah	18,600	3,157	3,154	3,196	42	247	499	19,353
Utah	189,000	28,441	28,415	28,917	502	3,336	6,907	199,320
Wasatch	7,700	1,289	1,288	1,262	-26	-155	133	7,681
Washington	20,600	3,460	3,457	3,708	251	1,494	543	22,646
Wayne	1,900	279	279	276	-3	-20	29	1,910
Weber	141,000	19,954	19,936	20,079	143	1,010	2,678	144,744

^aProvisional.

Table 5

**PRELIMINARY JULY 1, 1979 COUNTY POPULATION ESTIMATES USING
L.D.S., WORK FORCE, AND SCHOOL ENROLLMENT METHODS**

County	1978 Revised Estimates ^a	1979 L.D.S. Membership Method	1979 Work Force Method	1979 Natural Increase ^b	1979 School Enrollment Method	1979 L.D.S. Membership School Enrollment Average	1979 Preliminary Estimate
Total	1,317,000	1,366,353	1,388,830	32,162	1,363,962	1,365,158	1,367,000
Beaver	4,300	4,296	4,380	83	4,456	4,376	4,400
Box Elder	32,100	33,020	35,170	647	33,029	33,024	33,000
Cache	53,600	55,540	55,630	1,361	55,307	55,423	55,000
Carbon	21,300	21,898	23,820	436	21,450	21,674	22,000
Daggett	800	801	790	12	812	806	800
Davis	130,000	136,814	137,200	3,295	136,716	136,765	137,000
Duchesne	11,700	12,054	11,550	347	11,820	11,937	11,900
Emery	10,100	10,834	10,740	293	10,822	10,828	10,800
Garfield	3,800	3,706	4,050	45	3,783	3,744	3,800
Grand	8,000	8,185	7,350	155	7,799	7,992	7,900
Iron	16,400	17,273	16,880	397	17,244	17,258	17,200
Juab	5,700	5,890	4,880	115	5,746	5,818	5,700
Kane	4,000	4,054	3,730	58	3,862	3,958	3,900
Millard	8,700	8,875	9,350	174	8,963	8,919	9,000
Morgan	5,100	5,176	5,510	77	5,365	5,270	5,300
Piute	1,400	1,460	1,320	14	1,550	1,505	1,500
Rich	1,800	1,814	2,550	39	1,902	1,858	1,900
Salt Lake	544,000	562,056	574,140	12,414	558,923	560,489	563,000
San Juan	14,100	14,725	14,970	253	15,048	14,886	15,000
Sanpete	14,300	14,657	14,690	215	15,038	14,847	14,800
Sevier	14,440	14,766	14,500	282	15,160	14,963	15,000
Summit	8,000	8,232	9,010	169	8,704	8,468	8,700
Tooele	24,600	24,569	26,290	489	24,810	24,689	24,800
Uintah	18,600	19,554	18,990	499	19,353	19,453	19,300
Utah	189,000	200,402	199,810	6,907	199,320	199,861	199,000
Wasatch	7,700	8,007	7,930	133	7,681	7,844	7,800
Washington	20,600	22,358	22,840	543	22,646	22,502	22,600
Wayne	1,900	2,099	1,950	29	1,910	2,004	1,900
Weber	141,000	143,238	147,160	2,678	144,744	143,991	144,000

^aUtah Population Work Committee^bProvisional.

Table 6
POPULATION ESTIMATES FOR UTAH BY COUNTY FOR JULY 1, 1970, TO JULY 1, 1979

County	Final Annual 1970 Census	Revised July 1, 1970 Estimate	Revised July 1, 1971 Estimate	Revised July 1, 1972 Estimate	Revised July 1, 1973 Estimate	Revised July 1, 1974 Estimate	Revised July 1, 1975 Estimate	Revised July 1, 1976 Estimate	Revised July 1, 1977 Estimate	Revised July 1, 1978 Estimate	Preliminary July 1, 1979 Estimate
Total	1,059,537	1,066,000	1,095,000	1,128,000	1,150,000	1,179,000	1,203,000	1,232,000	1,270,000	1,317,000	1,367,000
Beaver	3,800	3,850	3,800	4,100	4,100	4,200	4,200	4,200	4,300	4,300	4,400
Box Elder	28,129	28,150	28,500	30,100	30,100	30,100	30,300	31,000	31,200	32,100	33,000
Cache	42,331	42,550	43,000	45,000	46,000	47,500	48,500	49,200	51,600	53,600	55,000
Carbon	15,647	15,750	16,100	16,500	17,000	17,000	18,500	19,400	20,500	21,300	22,000
Daggett	666	650	700	700	700	700	800	800	800	800	800
Davis	99,028	99,600	103,000	107,000	109,500	113,000	115,000	119,000	124,000	130,000	137,000
Duchesne	7,299	7,400	7,900	9,700	11,200	11,600	11,800	11,300	11,400	11,700	11,900
Emery	5,137	5,150	5,300	5,200	6,100	6,200	6,700	8,300	9,300	10,100	10,800
Garfield	3,157	3,150	3,200	3,100	3,100	3,300	3,400	3,500	3,600	3,800	3,800
Grand	6,688	6,600	6,300	6,200	6,300	6,500	6,500	6,900	7,300	8,000	7,900
Iron	12,177	12,300	12,900	13,200	13,600	14,000	14,400	14,800	15,600	16,400	17,200
Juab	4,574	4,600	4,600	4,500	5,000	5,200	5,200	5,300	5,600	5,700	5,700
Kane	2,421	2,450	2,500	2,700	3,200	3,300	3,500	3,600	3,800	4,000	3,900
Millard	6,988	7,050	7,200	7,700	7,700	7,900	8,000	8,200	8,400	8,700	9,000
Morgan	3,983	4,050	4,100	4,400	4,500	4,600	4,700	4,800	4,900	5,100	5,300
Piute	1,164	1,150	1,100	1,100	1,200	1,200	1,300	1,300	1,400	1,400	1,500
Rich	1,615	1,600	1,600	1,500	1,500	1,600	1,600	1,600	1,700	1,800	1,900
Salt Lake	458,607	461,500	473,500	482,000	488,000	500,000	508,000	518,000	532,000	544,000	563,000
San Juan	9,606	9,700	10,200	10,700	10,700	10,800	11,200	12,200	13,000	14,100	15,000
Sanpete	10,976	11,000	11,200	11,900	12,400	12,500	12,500	12,800	13,400	14,300	14,800
Sevier	10,103	10,150	10,500	10,900	11,800	12,400	12,800	13,100	13,700	14,400	15,000
Summit	5,879	5,900	6,000	6,100	6,500	6,500	6,600	7,000	7,200	8,000	8,700
Tooele	21,545	21,600	22,100	22,000	22,300	23,000	23,000	23,700	24,300	24,600	24,800
Uintah	12,684	12,800	13,300	14,400	15,200	16,000	17,000	17,300	18,000	18,600	19,300
Utah	137,776	139,300	144,600	150,000	155,000	160,000	166,000	171,000	177,000	189,000	199,000
Wasatch	5,863	5,950	6,200	6,500	6,500	6,500	6,700	7,000	7,300	7,700	7,800
Washington	13,669	13,900	14,900	16,000	16,000	16,500	17,200	18,000	19,200	20,600	22,600
Wayne	1,483	1,450	1,500	1,500	1,600	1,600	1,600	1,700	1,800	1,900	1,900
Weber	126,542	126,700	128,800	133,000	134,000	135,000	136,000	137,000	138,000	141,000	144,000

Note: Estimates were prepared by the Utah Population Work Committee.

Utah Business Statistics

Statewide Statistical Data

	July 1979	June 1979	July 1978	% Chg. From Year Ago	12 Mo. Average Ending		
					July 1979	July 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	40,968	37,263	28,936	41.6	39,327	31,168	26.2
Livestock and Livestock Products (thous. of dol.)	29,460	28,708	21,404	37.6	30,192	24,249	24.5
Crops (thous. of dol.)	11,508	8,555	7,532	52.8	9,134	6,919	32.0
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	66.8	68.5	51.7	29.2	65.0	43.9	48.1
Lambs (cwt)	59.9	61.4	56.4	6.2	61.7	55.6	11.0
Turkeys (per lb.)	.410	.450	.470	-12.8	0.5	.40	25.0
Milk, Wholesale (cwt)	11.3	11.3	9.85	14.7	11.2	9.7	15.5
Alfalfa Hay, Baled (per ton)	52.5	53.0	47.5	10.5	49.5	53.8	-8.0
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	14,940	16,412	16,953	-11.9	17,189	20,744	-17.1
Calves (thous. of lbs.)	—	—	—	—	—	—	—
Sheep and Lambs (thous. of lbs.)	211	226	188	12.2	215.9	228	-5.3
Hogs and Pigs (thous. of lbs.)	2,125	2,318	1,827	16.3	2,131	2,096	1.7
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,020	3,094	2,811	7.4	2,963	2,617	13.2
Investments, Total, Utah Member Banks (mil. of dol.) ^a	829	826	756	9.7	819	744	10.1
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	5,772	3,789	3,566	5.8	3,718	3,329	11.7
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	63	61	65	-3.1	54.8	54	1.5
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,191	1,172	1,180	0.9	1,149	1,095	4.9
Time Deposits, Total, Utah (mil. of dol.) ^a	2,518	2,555	2,321	8.5	2,515	2,182	15.3
Savings, Savings and Loan Association (mil. of dol.) ^b	1,630.9	1,622.6	1,426.0	14.4	1,537.1	1,404.7	9.4
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	2,900.0	2,319.0	2,300.7	26.0	2,329.9	2,791.7	-16.5
New Corporations (no.)	392	411	398	-1.5	409.5	383	6.9
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	132,949.1	40,449.6	21,433.0	53.7	68,313.7	57,351.0	19.1
Sales & Use Tax	3,221.4	48,077.4	5,462.8	-41.0	29,936.2	26,551.9	12.7
Motor Fuel Tax	5,776.3	4,048.9	2,428.8	137.8	5,621.0	4,095.3	37.3
Individual Income Tax	11,541.6	20,095.1	8,888.1	29.9	22,452.1	18,418.3	21.9
Corporation Franchise Tax	1,994.6	1,179.8	1,093.2	82.5	3,230.1	2,731.7	18.2
Employment							
Civilian Labor Force (thous.) ^c	626.6	636.1	590.5	6.1	608.0	571.2	6.4
Total Employed Persons	593.8	601.9	560.2	6.0	579.8	543.6	6.7
Unemployed	32.7	34.2	30.3	7.9	28.2	27.6	2.2
Percent Total Labor Force	5.2	5.4	5.1	2.0	4.6	4.8	-4.2
Employees on Nonagricultural Payrolls (thous. of jobs)	550.6	561.6	518.7	6.1	543.7	509.3	6.8
Manufacturing	85.9	85.6	80.8	6.3	83.4	77.2	8.0
Mining	18.0	17.9	16.6	8.4	17.1	15.3	11.8
Contract Construction	39.7	40.1	37.6	5.6	36.2	34.2	5.8
Transportation, Communication and Utilities	35.1	35.1	32.3	8.7	33.2	30.6	8.5
Wholesale Trade	35.3	35.5	32.1	10.0	33.3	30.2	10.3
Retail Trade	98.9	100.2	94.6	4.5	98.4	93.3	5.5
Finance, Insurance and Real Estate	26.1	26.4	24.5	6.5	25.1	23.6	6.4
Services ^d	99.4	98.9	90.1	10.3	95.8	87.5	9.5
Federal Government	37.1	37.2	37.7	-1.6	37.0	36.8	0.5
State Government ^e	29.4	29.1	29.7	-1.0	32.0	30.8	3.9
Local Government ^e	45.8	55.5	48.8	-6.1	53.8	49.7	8.2
Average Weekly Hours:							
Manufacturing	38.8	38.6	39.1	-0.8	39.1	39.8	-1.8
Mining	42.5	41.6	41.5	2.4	42.0	42.5	-1.2
Contract Construction	37.6	38.0	39.1	-3.8	37.7	41.0	-8.0
Wholesale Trade	38.7	38.0	38.3	1.0	37.4	36.2	3.3
Retail Trade	28.9	27.9	28.6	1.0	28.0	29.1	-3.8
Amount of Unemployment Comp. (thous. of dol.)	3,113.9	2,820.1	2,340.8	33.0	3,833.4	3,210.2	19.4
Construction							
Total Construction (thous. of dol.)	197,427	182,024	131,618	50.0	120,572	103,164	16.9
Residential	78,789	83,998	62,806	25.4	62,234	58,487	6.4
Nonresidential	100,268	75,687	54,580	83.7	42,952	33,088	29.8
Public Works and Utilities	18,370	22,339	14,232	29.1	15,386	11,712	31.4
Total Permit Construction (thous. of dol.) ^f	105,545.2	126,498.4	95,808.4	10.2	97,962.4	94,093.2	4.1
Residential	68,015.1	71,399.3	64,300.0	5.8	57,137.6	64,411.5	-11.3
Nonresidential	31,476.1	48,723.7	25,620.1	22.9	34,579.0	23,710.2	45.8
Additions, Alterations and Repairs	6,054.0	6,375.4	5,888.3	2.8	5,965.8	5,971.5	-0.1
New Dwelling Units (no.)	1,729	1,805	1,927	-10.3	1,533.5	1,963.2	-21.9
Tourism/Travel							
Air Passengers (total no. on and off)	417,894	415,805	406,416	2.8	375,907.5	333,572	12.7
Highway Traffic Count Across State Lines	51,059	46,988	63,421	-19.5	39,430	41,438	-4.8
Transient Room Taxes (thous. of dol.)	1.4	447.3	39.9	-96.5	171.8	145.3	18.2
Visits, State, Nat'l. Parks, Monuments (thous.)	2,322.1	2,089.7	2,581.5	-10.0	1,060.4	1,140.6	-7.0
General							
New Cars and Truck Sales	na	na	na	—	na	na	—
C.P.I. (National Index — 1967=100)	218.9	216.6	196.7	11.3	206.9	188.1	10.0
Telephones in Service. (Business)	73,742	na	70,125	5.2	na	68,377	—
Telephones in Service. (Residential)	392,375	na	373,153	5.2	na	368,817	—
Electric Customers (Commercial)	31,726	31,711	30,407	4.3	31,261	29,227	7.0
Electric Customers (Residential)	340,233	339,354	324,403	4.9	334,790	317,961	5.3
Natural Gas Customers (Residential & Commercial)	447,767	450,976	428,717	4.4	445,825	423,955	5.2
Natural Gas Customers (Industrial)	843	859	895	-5.8	927.7	959	-3.3
Production							
Net Electric Power Utilized (mil. of kwh)	1,068.9	1,037.5	1,003.0	6.6	881.5	881.3	0
Crude Oil to Refineries (thous. of bbls.)	5,018.9	4,907.3	5,644.6	-11.1	5,085.9	5,154.9	-1.3
	(June '79)	(May '79)	(June '78)		(June '79)	(June '78)	
Crude Oil Production (thous. of bbls.)	2,179.9	2,285.4	2,985	-27.0	2,783.9	2,809.4	-0.9
Natural Gas Production (mil. of cu. ft.)	5,549.6	5,912.6	6,044	-8.2	6,249.8	6,705.9	-6.8
Coal (thous. short tons)	1,197	1,028	864	38.5	984.8	759	29.7
Copper (thous. metric tons) ^g	17,601	17,012	16,647	5.7	15,016.5	15,853	-5.3

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA

	July 1979	June 1979	July 1978	% Chg. From Year Ago	12 Mo. Average Ending		
					July 1979	July 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)*	394.2	399.9	371.6	6.1	387.9	363.2	6.8
Auth. Permit Construction (mil. of dol.)	70.9	88.7	57.7	22.9	64.1	61.0	5.1
New Dwelling Units	1,062	1,140	1,083	-1.9	979.3	1,253	-21.8
Postal Receipts (thous.)	4,077.4	3,714.0	3,644.5	11.9	4,386.0	3,577.9	22.6
Electric Customers (Residential)	261,190	260,666	249,357	4.7	257,210	245,071	5.0
Electric Customers (Commercial)	20,697	20,661	19,710	5.0	20,352	19,077	6.7
Natural Gas Customers (Residential)	265,126	266,543	251,660	5.4	262,463	248,677	5.5
Natural Gas Customers (Industrial)	427	438	455	-6.2	476.7	489	-2.5
Department Store Sales (mil. of dol.)	23,312	24,330	23,327	-0.1	25,797	24,827	3.9
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele) (thous.)*	285.5	298.2	279.4	2.2	285.5	269.7	5.9
Auth. Permit Construction (mil. of dol.)	18.6	15.7	4.6	304.3	10.8	7.4	45.9
New Dwelling Units	161	12	22	631.8	60.7	72	-15.7
Postal Receipts (thous.)	3,414.4	3,056.2	3,056.9	11.7	3,616.6	2,950.9	22.6
Natural Gas Customers (Residential)	55,976	56,796	55,422	1.0	56,679	55,713	1.7
Natural Gas Customers (Industrial)	161	161	172	-6.4	178.5	180	-0.8
Telephones in Service. (Business)h	40,950	na	39,065	4.8	na	38,157	-
Telephones in Service. (Residential)h	202,541	na	193,223	4.8	na	189,767	-
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis) (thous.)	92.9	97.2	88.7	4.7	93.3	90.0	3.7
Auth. Permit Construction (mil. of dol.)	1.5	15.7	2.3	-34.8	5.8	2.7	114.8
New Dwelling Units	6	87	27	-77.8	42.0	29	44.8
Postal Receipts	335.4	291.7	277.8	20.7	343.2	281.6	21.9
Natural Gas Customers (Residential)	21,100	21,132	20,841	1.2	21,178	21,034	0.7
Natural Gas Customers (Industrial)	56	59	63	-11.1	63.0	70	-10.0
Telephones in Service. (Business)l	6,798	na	6,394	6.3	na	6,383	-
Telephones in Service. (Residential)l	41,638	na	40,191	3.6	na	39,790	-
Mountainland (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)*	66.4	69.7	62.2	6.8	68.9	64.3	7.2
Auth. Permit Construction (mil. of dol.)	16.7	16.7	15.1	10.6	17.4	17.0	2.4
New Dwelling Units	377	338	290	30.0	286.5	382.1	-25.0
Postal Receipts (thous.)	489.5	505.1	454.9	7.6	538.0	406.5	32.3
Electric Customers (Residential)	31,200	31,038	29,327	6.4	30,694.1	28,612	7.3
Electric Customers (Commercial)	2,894	2,907	2,713	6.7	2,841	2,625	8.2
Natural Gas Customers (Residential)	55,158	55,341	51,920	6.2	54,789	51,254	6.9
Natural Gas Customers (Industrial)	90	90	92	-2.2	96	98	-2.2
Provo							
Non-Ag. Employment (thous.) (Utah Co.)*	61.3	64.2	57.2	7.2	73.1	59.1	23.7
Auth. Permit Construction (mil. of dol.)	1.7	3.7	4.3	-60.5	5.0	2.5	100.0
New Dwelling Units	33	79	83	-60.2	75.3	65	15.8
Postal Receipts (thous.)	278.4	304.8	276.0	0.9	318.6	248.8	28.1
Natural Gas Customers (Residential)	14,449	14,538	13,868	4.2	14,460	13,843	4.5
Natural Gas Customers (Industrial)	44	44	47	-6.4	46.8	47	-0.4
Telephones in Service. (Business)l	6,057	na	5,997	1.0	na	5,804	-
Telephones in Service. (Residential)l	34,946	na	32,992	5.9	na	34,085	-
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non-Ag. Employment (thous.)*	13.1	13.5	12.3	6.5	12.7	11.7	8.5
Auth. Permit Construction (mil. of dol.)	2.0	2.2	2.0	0.0	2.2	2.1	4.8
New Dwelling Units	36	46	54	-33.3	43.5	43	1.2
Postal Receipts (thous.)	69.6	63.1	63.6	9.4	69.8	61.1	14.2
Electric Customers (Residential)	8,733	8,685	8,353	4.5	8,558	8,197	4.4
Electric Customers (Commercial)	1,895	1,910	1,926	-1.6	1,911	1,830	4.4
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)*	10.9	11.6	10.2	6.9	10.9	10.0	9.0
Auth. Permit Construction (mil. of dol.)	2.2	1.7	3.7	-40.5	2.4	2.0	20.0
New Dwelling Units	35	38	38	-7.9	32	35.3	-9.9
Postal Receipts (thous.)	44.3	43.5	41.1	7.8	46.9	32.5	44.3
Electric Customers (Residential)	4,708	4,668	4,436	6.1	4,565	4,284	6.6
Electric Customers (Commercial)	751	761	729	3.0	741	681	8.8
Natural Gas Customers (Residential)	5,000	5,096	4,954	0.9	5,142	4,983	3.2
Natural Gas Customers (Industrial)	8	7	8	0.0	8	9	-11.1
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)*	29.6	30.7	28.2	5.0	30.1	28.5	5.6
Auth. Permit Construction (mil. of dol.)	5.4	4.5	8.6	-37.2	4.5	4.5	0.0
New Dwelling Units	89	97	100	-11.0	68.4	97.3	-29.7
Postal Receipts (thous.)	173.2	187.6	181.5	-4.6	202.4	156.8	29.8
Electric Customers (Residential)	13,769	13,677	13,196	4.3	13,522	12,993	4.1
Electric Customers (Commercial)	1,694	1,696	1,653	2.5	1,675	1,610	4.1
Natural Gas Customers (Residential)	22,998	23,489	22,299	3.1	23,081	22,216	3.9
Natural Gas Customers (Industrial)	46	47	47	-2.1	47.9	48	-0.2
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)*	19.9	20.1	18.7	6.4	15.2	17.2	11.6
Auth. Permit Construction (mil. of dol.)	6.9	3.7	3.2	115.6	2.7	3.4	-20.6
New Dwelling Units	36	52	79	-54.4	32	45.7	-29.5
Postal Receipts (thous.)	na	na	na	-	na	na	-
Electric Customers (Residential)	10,508	10,493	9,974	5.4	10,320	9,666	6.8
Electric Customers (Commercial)	1,389	1,391	1,339	3.7	1,374	1,280	7.4
Natural Gas Customers (Residential)	7,960	8,041	7,753	2.7	8,033	7,775	3.3
Natural Gas Customers (Industrial)	11	13	11	0.0	12	12	0.0
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)*	16.4	16.3	15.5	5.8	15.7	14.7	6.8
Auth. Permit Construction (mil. of dol.)	6.9	4.8	7.5	-8.0	4.8	4.2	14.3
New Dwelling Units	117	118	283	-58.7	89.0	106.8	-16.7
Postal Receipts (thous.)	92.0	91.4	85.5	7.6	95.9	70.3	36.4
Electric Customers (Residential)	10,125	10,127	9,760	3.7	9,924	9,136	8.6
Electric Customers (Commercial)	2,406	2,385	2,337	3.0	2,365	2,127	11.2

Utah Business Statistics

Statewide Statistical Data

Statewide Statistical Data	August 1979	July 1979	August 1978	% Chg.	12 Mo. Average Ending		
				From Year Ago	August 1979	August 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	41,330	40,968	32,899	25.6	40,030	31,268	28.0
Livestock and Livestock Products (thous. of dol.)	32,912	29,460	27,268	20.7	30,662	24,305	26.2
Crops (thous. of dol.)	8,418	11,508	5,631	49.5	9,366	6,963	34.5
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	61.1	66.8	52.1	17.3	65.7	45.2	45.4
Lambs (cwt)	57.3	59.9	57.0	0.5	61.7	56.2	9.8
Turkeys (per lb.)	.430	.410	.490	-12.2	.500	.41	22.0
Milk, Wholesale (cwt)	11.4	11.3	10.2	11.8	11.3	9.8	15.3
Alfalfa Hay, Baled (per ton)	51.5	52.5	46.5	10.8	50.0	52.6	-4.9
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	15,665	14,940	21,188	-26.1	16,730	20,458	-18.2
Calves (thous. of lbs.)	38	0	17	123.5	9	31	-71.0
Sheep and Lambs (thous. of lbs.)	244	211	232	5.2	216.9	226	-4.0
Hogs and Pigs (thous. of lbs.)	2,738	2,125	1,855	47.6	2,205	1,889	16.7
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,080	3,020	2,886	6.7	2,979	2,662	11.9
Investments, Total, Utah Member Banks (mil. of dol.) ^a	842	829	769	9.5	825	748	10.3
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,723	3,772	3,612	3.1	3,727	3,376	10.4
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	50	63	46	8.7	55	54	2.0
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,135	1,191	1,187	-4.4	1,145	1,111	3.0
Time Deposits, Total, Utah (mil. of dol.) ^a	2,537	2,518	2,379	6.6	2,528	2,214	14.2
Savings, Savings and Loan Association (mil. of dol.) ^b	1,636.7	1,630.9	1,428.6	14.6	1,554	1,416.2	9.8
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	2,000.1	2,900.0	2,395.3	-16.5	2,297	2,522.8	-9.0
New Corporations (no.)	408	392	386	5.7	411	386	6.6
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	136,554.1	32,949.1	124,954.6	9.3	69,280	59,571.2	16.3
Sales & Use Tax	79,239.7	3,221.4	80,719.2	-1.8	29,813	27,773.8	7.3
Motor Fuel Tax	6,114.5	5,776.3	8,063.3	-24.2	5,458.6	4,345.8	25.6
Individual Income Tax	36,567.2	11,541.6	29,211.5	25.2	23,065	18,953.4	21.7
Corporation Franchise Tax	1,245.2	1,994.6	1,791.4	-30.5	3,184.6	2,778.7	14.6
Employment							
Civilian Labor Force (thous.) ^c	629.7	626.6	597.5	5.4	610.7	573.8	6.4
Total Employed Persons	598.0	593.8	566.8	5.5	582.4	546.5	6.6
Unemployed	31.7	32.7	30.8	2.9	28.3	27.3	3.7
Percent Total Labor Force	5.0	5.2	5.2	-3.8	4.6	4.7	-2.1
Employees on Nonagricultural Payrolls (thous. of jobs)	556.5	550.6	525.5	5.9	546.3	512.0	6.7
Manufacturing	87.3	85.9	82.1	6.3	83.8	77.6	8.0
Mining	18.0	18.0	16.8	7.1	17.2	15.4	11.7
Contract Construction	40.4	39.7	38.5	4.9	36.4	34.4	5.8
Transportation, Communication and Utilities	35.3	35.1	32.8	7.6	33.4	30.8	8.4
Wholesale Trade	35.5	35.3	32.4	9.6	33.6	30.5	10.2
Retail Trade	99.7	98.9	96.0	3.9	98.7	93.8	5.2
Finance, Insurance and Real Estate	26.5	26.1	24.7	7.3	25.3	23.7	6.8
Services ^d	100.6	99.4	91.7	9.7	96.5	88.2	9.4
Federal Government	36.9	37.1	37.1	-0.5	37.0	36.9	0.3
State Government ^e	29.6	29.4	29.5	0.3	32.0	30.9	3.6
Local Government ^e	46.7	45.8	43.9	6.4	54.0	49.6	8.9
Average Weekly Hours:							
Manufacturing	39.2	38.8	38.9	0.8	39.1	39.7	-1.5
Mining	42.3	42.5	43.5	-2.8	41.9	42.6	-1.6
Contract Construction	36.4	37.6	38.8	-6.2	37.5	40.7	-7.6
Wholesale Trade	38.0	38.7	37.5	1.3	37.4	36.3	3.0
Retail Trade	28.9	28.9	28.9	0.0	28.0	29.1	-3.8
Amount of Unemployment Comp. (thous. of dol.)	3,113.9	2,861.1	2,808.7	10.9	3,858.8	3,175.2	21.5
Construction							
Total Construction (thous. of dol.)	113,347	197,427	120,794	-6.2	119,951	105,888	13.3
Residential	68,738	78,789	64,411	6.7	62,595	58,697	6.6
Nonresidential	36,844	100,268	39,480	-6.7	42,732	35,851	19.2
Public Works and Utilities	7,765	18,370	16,903	-54.1	14,625	11,463	27.6
Total Permit Construction (thous. of dol.) ^f	136,172.4	105,545.2	104,527.0	30.3	100,599.5	94,785.2	6.1
Residential	69,101.6	68,015.1	61,559.8	12.3	57,766.1	63,850.2	-9.5
Nonresidential	60,928.7	31,476.1	37,182.8	63.9	36,557.8	24,981.2	46.3
Additions, Alterations and Repairs	6,142.1	6,054.0	5,784.4	6.2	5,995.6	5,953.8	0.7
New Dwelling Units (no.)	1,946	1,729	1,812	7.4	1,545	1,920.9	-19.6
Tourism/Travel							
Air Passengers (total no. on and off)	463,036	417,894	445,337	4.0	377,382	339,570	11.1
Highway Traffic Count Across State Lines	53,766	51,059	60,726	-11.5	38,850	41,811	-7.1
Transient Room Taxes (thous. of dol.)	404.4	1.4	421.4	-4.0	170.4	149.7	13.8
Visits, State, Nat'l. Parks, Monuments (thous.)	1,785.6	2,322.1	2,173.8	-17.9	1,028.1	1,141.2	-9.9
General							
New Cars and Truck Sales	na	na	na	-	na	na	-
C.P.I. (National Index — 1967=100)	221.1	218.9	197.8	11.8	208.8	190.0	9.9
Telephones in Service. (Business)	74,312	73,742	70,616	5.2	na	68,711	-
Telephones in Service. (Residential)	395,131	392,375	375,585	5.2	na	370,436	-
Electric Customers (Commercial)	31,758	31,726	30,531	4.0	31,363.3	29,415	6.6
Electric Customers (Residential)	341,286	340,233	325,497	4.9	336,106	318,886	5.4
Natural Gas Customers (Residential & Commercial)	446,680	447,767	426,367	4.8	447,518	425,402	5.2
Natural Gas Customers (Industrial)	875	843	938	-6.7	923	957	-3.6
Production							
Net Electric Power Utilized (mil. of kwh)	972.0	1,068.9	893.7	8.8	888.0	880.7	0.8
Crude Oil to Refineries (thous. of bbls.)	4,890.4	5,018.9	5,564.4	-12.1	5,029.7	5,167.4	-2.7
	(July '79)	(June '79)	(July '78)		(July '79)	(July '78)	
Crude Oil Production (thous. of bbls.)	2,206.5	2,179.9	2,933	-24.8	2,723.4	2,823.8	-3.6
Natural Gas Production (mil. of cu. ft.)	5,742.2	5,549.6	5,755	-0.2	6,248.7	6,662.2	-6.2
Coal (thous. short tons)	818	1,197	1,006	-18.7	969.1	782	23.9
Copper (thous. metric tons) ^g	16,149	17,601	9,098	77.5	15,604.1	15,853	-1.6

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA				% Chg.	12 Mo. Average Ending		
	August 1979	July 1979	August 1978	From Year Ago	August 1979	August 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)*	398.2	394.2	378.0	5.9	389.8	365.1	6.8
Auth. Permit Construction (mil. of dol.)*	70.4	88.7	60.1	17.1	65.0	60.5	7.4
New Dwelling Units	1,226	1,140	1,173	4.5	983.7	1,222	-19.5
Postal Receipts (thous.)	3,778.5	4,077.4	3,854.2	-2.0	4,379.7	3,602.9	21.6
Electric Customers (Residential)	261,717	261,190	250,069	4.7	258,182	245,528	5.2
Electric Customers (Commercial)	20,724	20,697	19,799	4.7	20,429	19,194	6.4
Natural Gas Customers (Residential)	264,292	265,126	249,649	5.9	263,683	249,576	5.7
Natural Gas Customers (Industrial)	448	427	475	-6.5	474.1	488	-2.8
Department Store Sales (mil. of dol.)	28,071	23,312	27,036	3.8	25,883	24,954	3.7
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele)(thous.)*	299.6	285.5	282.2	6.2	287.0	270.9	5.9
Auth. Permit Construction (mil. of dol.)*	10.4	18.6	6.7	55.2	11.1	7.4	50.0
New Dwelling Units	57	161	17	235.3	64.0	69	-7.2
Postal Receipts (thous.)	3,136.6	3,414.4	3,244.1	-3.3	3,607.6	2,974.8	21.3
Natural Gas Customers (Residential)	55,796	55,976	55,202	1.1	56,729	55,774	1.7
Natural Gas Customers (Industrial)	164	161	180	-8.9	177.2	180	-1.6
Telephones in Service. (Business)h	41,185	40,950	39,302	4.8	na	38,335	-
Telephones in Service. (Residential)h	204,240	202,541	194,558	5.0	na	190,578	-
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis)(thous.)	93.7	92.9	89.4	4.8	93.7	90.3	3.8
Auth. Permit Construction (mil. of dol.)*	6.4	1.5	3.1	106.5	6.1	2.9	110.3
New Dwelling Units	30	6	40	-25.0	41.2	31	32.9
Postal Receipts	286.8	335.4	276.0	3.9	344.1	280.8	77.5
Natural Gas Customers (Residential)	20,855	21,100	20,740	0.6	21,187.6	21,034	0.7
Natural Gas Customers (Industrial)	60	56	65	-7.7	62.6	69	-9.3
Telephones in Service. (Business)i	6,854	6,798	6,460	6.1	na	6,394	-
Telephones in Service. (Residential)i	41,843	41,638	40,364	3.7	na	39,903	-
Mountainland (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)*	67.1	66.4	63.1	6.3	69.2	64.6	7.1
Auth. Permit Construction (mil. of dol.)*	31.4	16.7	16.7	88.0	18.6	17.1	8.8
New Dwelling Units	398	377	294	35.4	295.2	371.4	-21.2
Postal Receipts (thous.)	492.1	489.5	440.0	11.8	542.3	408.3	32.8
Electric Customers (Residential)	31,473	31,200	29,636	6.2	30,847	28,817	7.0
Electric Customers (Commercial)	2,914	2,894	2,722	7.1	2,857	2,645	8.0
Natural Gas Customers (Residential)	55,303	55,158	51,942	6.5	55,069	51,558	6.8
Natural Gas Customers (Industrial)	92	90	97	-5.2	95.6	99	-2.4
Provo							
Non-Ag. Employment (thous.) (Utah Co.)*	62.1	61.3	58.1	6.9	64.0	59.4	7.7
Auth. Permit Construction (mil. of dol.)*	2.1	1.7	4.5	-53.3	4.8	2.8	71.4
New Dwelling Units	34	33	91	-62.6	70.6	69	2.3
Postal Receipts (thous.)	270.7	278.4	261.4	3.6	319.4	249.9	27.8
Natural Gas Customers (Residential)	14,645	14,449	13,903	5.3	14,522	13,900	4.5
Natural Gas Customers (Industrial)	43	44	48	-10.4	46.4	47	-1.3
Telephones in Service. (Business)j	6,152	6,057	6,079	1.2	na	5,843	-
Telephones in Service. (Residential)j	35,606	34,946	33,295	6.9	na	34,261	-
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non-Ag. Employment (thous.)*	13.0	13.1	12.2	6.6	12.8	11.8	8.5
Auth. Permit Construction (mil. of dol.)*	3.1	2.0	2.4	29.2	2.3	2.1	9.5
New Dwelling Units	57	36	67	-14.9	42.7	44.3	-3.6
Postal Receipts (thous.)	60.9	69.6	60.7	0.3	69.8	61.8	12.9
Electric Customers (Residential)	8,762	8,733	8,393	4.4	8,589	8,223	4.4
Electric Customers (Commercial)	1,881	1,895	1,914	-1.7	1,908	1,843	3.5
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)*	11.8	10.9	11.0	7.3	11.0	10.1	8.9
Auth. Permit Construction (mil. of dol.)*	11.5	2.2	1.4	721.4	3.2	1.9	68.4
New Dwelling Units	28	35	27	3.7	32.1	34.3	-6.4
Postal Receipts (thous.)	41.4	44.3	43.9	-5.7	46.7	33.2	40.7
Electric Customers (Residential)	4,725	4,708	4,467	5.8	4,587	4,312	6.4
Electric Customers (Commercial)	750	751	734	2.2	742.3	704	5.4
Natural Gas Customers (Residential)	4,981	5,000	4,987	-0.1	5,142	5,003	2.8
Natural Gas Customers (Industrial)	7	8	8	-12.5	8	9	-12.2
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)*	29.9	29.6	28.5	4.9	30.2	28.6	5.6
Auth. Permit Construction (mil. of dol.)*	7.1	5.3	15.9	-55.3	3.8	5.5	-30.9
New Dwelling Units	87	78	81	7.4	68.9	93.1	-26.0
Postal Receipts (thous.)	187.3	173.2	171.8	9.0	203.7	157.3	29.5
Electric Customers (Residential)	13,831	13,769	13,271	4.2	13,569	13,038	4.1
Electric Customers (Commercial)	1,708	1,694	1,650	3.5	1,680	1,616	3.9
Natural Gas Customers (Residential)	22,864	22,998	22,153	3.2	23,140	22,296	3.8
Natural Gas Customers (Industrial)	48	46	49	-2.0	48	48	-0.4
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)*	20.2	19.9	18.9	6.9	19.3	17.4	10.9
Auth. Permit Construction (mil. of dol.)*	8.5	1.6	3.5	142.9	3.1	3.5	-11.4
New Dwelling Units	57	24	64	-10.9	31.4	47.8	-34.3
Postal Receipts (thous.)	na	na	na	-	na	na	-
Electric Customers (Residential)	10,524	10,508	9,969	5.6	10,366	9,739	6.4
Electric Customers (Commercial)	1,390	1,389	1,333	4.3	1,379	1,290	6.9
Natural Gas Customers (Residential)	7,944	7,960	7,791	2.0	8,046	7,802	3.1
Natural Gas Customers (Industrial)	13	11	12	8.3	12	12	0.8
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)*	16.6	16.4	15.7	5.7	15.8	14.8	6.8
Auth. Permit Construction (mil. of dol.)*	4.1	6.9	4.5	-8.9	4.8	4.3	11.6
New Dwelling Units	93	117	106	-12.3	88	105.2	-16.4
Postal Receipts (thous.)	91.7	92.0	82.6	11.0	96.7	70.8	36.6
Electric Customers (Residential)	10,254	10,125	9,702	5.7	9,970.0	9,226	8.1
Electric Customers (Commercial)	2,391	2,406	2,379	0.5	2,356	2,140	10.6

THE UTAH POPULATION WORK COMMITTEE

The following persons served as members of the Utah Population Work Committee and contributed to making the July 1, 1979 county population estimates for Utah:

John E. Brockert, Chairman Utah State Division of Health	Edith McCrimmon Mountain Bell Telephone Company	Alan Witt Utah Foundation	Jeannie Watanabe State Planning Coordinator's Office
Elvin Osman State Department of Education	Howard C. Neilson Utah System of Higher Education	Glenn E. Casey Blue Cross - Blue Shield	Marvin Levy Utah State Department of Health
Yun Kim Utah State University	Jewell J. Rasmussen University of Utah	Gery E. Moore Utah State Division of Health	Jean Binyon Utah Department of Social Services
Kenneth E. Jensen Utah Department of Employment Security	Susan Davis Mountain Fuel Supply	Larry Elkington L.D.S. Church	
Frank C. Hachman University of Utah	Earl Hodgkins Utah Health Systems Agency	Kreg Kirkham Bureau of Land Management	

BUSINESS STATISTICS Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices:
U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
Savings, Savings and Loan Association: Utah savings and
loan institutions
U.S. Savings Bonds: U.S. Treasury Department
New Corporations: Utah Secretary of State
Tax Collections: Utah State Tax Commission
Employment data: Utah Department of Employment
Security
Construction: Dodge Construction Statistics and BEBR
Air Passengers: Salt Lake International Airport, statistics
service
Traffic Count: Utah Department of Transportation, Travel
Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest
Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile
Dealers Registrations Service Company
Telephone, electric, natural gas customers:
cooperating Utah utility companies
Net Electric Power Utilized: cooperating
Utah power companies
Crude Oil to Refineries: cooperating
Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^a End of Period, includes member banks of Federal Reserve
System
- ^b As of the close of business on last day of the month
- ^c Current year—preliminary data; previous
year—final figures.
- ^d Includes nonprofit and religious
- ^e Includes public schools and colleges
- ^f Total new construction plus additions, alterations and
repairs
- ^g Beginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231
- ^h Includes Salt Lake County and Bountiful
- ⁱ Includes Weber and Morgan Counties
- ^j Includes Orem and Springville
- ^r revised
- ^x increase from zero or decrease to zero
- na not available

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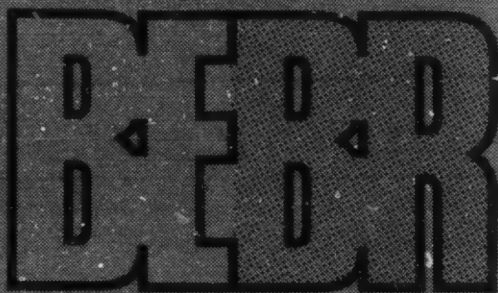
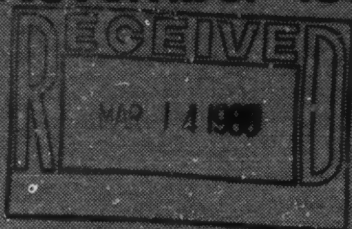
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Business School's Research Center Studies Impact of Intermountain Power Project*

by *R. Thayne Robson, Rodger Weaver,
and Frank C. Hachman ***

What will happen to the Utah economy when the largest industrial complex ever proposed for the state is built in a sparsely populated rural area and uses coal from another rural area approximately one hundred miles distant? The project in question is the \$4 billion Intermountain Power Project (IPP), a 3,000 megawatt, coal-fired electric power plant intended to provide electric power for cities in California, for publicly-owned electrical systems in Utah, and for Utah Power and Light Company. This project recently received federal approval for construction at Lynndyl, Millard County, approximately 20 miles from Delta.

For the past year, the Bureau of Economic and Business Research (BEER) in the College of Business has been studying power plant siting in the Great Basin area of Utah (the western tier of counties) as part of a research consortium involving Utah State University, Brigham Young University and the University of Utah. One part of this study -- being reported in this article -- is an assessment of the socio-economic impact of potential major power plant developments in the area. While the number of possible effects is large, BEER efforts have concentrated on changes in population, employment and the additional private business activity and public facilities required to support the proposed project. This additional business activity includes the providing of many of the goods and services presently supplied by nearby larger communities and trade centers.

For purposes of analysis, the impact of such a plant can be considered in four interrelated categories:

1. *Power Plant Construction.* The first category is the construction phase lasting approximately nine years. Here employment begins relatively modestly but grows rapidly, ultimately peaking in the sixth year when more than 2,500 workers

*This article was originally prepared for *the Journal*, a publication of the University of Utah Graduate School of Business. A summary will appear in an upcoming issue of the *Journal*.

** R. Thayne Robson, Director, Bureau of Economic and Business Research; Rodger Weaver, Sr. Research Economist; Frank C. Hachman, Associate Director.

will be constructing the power plant, while additional construction workers are required to build housing and other public or private facilities. (The construction manpower requirements and schedule used here are taken from *IPP Volume II: Lynndyl Alternate Site Environmental Statement*, U.S. Department of the Interior, Bureau of Land Management, 1979. The U.S. Department of Labor's "Construction Labor Demand System" provides construction phase data for a plant like IPP's with a shorter construction interval than is indicated in the *IPP Environmental Statement* and a higher peak construction force.)

2. *Operations and Maintenance.* The second phase is the operations and maintenance of the power plant, which begins when the first generating unit comes on line and continues for the life of the plant.

3. *Coal Mining and Transportation.* The third category stems from the requirements to mine and transport eight to 10 million tons of coal per year to fuel the plant. Here again, the demand for coal begins when the first unit goes on line and builds to a full scale demand when all units are in operation.

4. *Secondary Impacts.* Each of these activities will generate additional growth as all private and public sectors expand to support increases in the primary activities.

How do we arrive at reliable estimates of the effect this development will have upon population, employment and the demand for public and private facilities and services? The answer is to use the best available demographic and econometric modeling techniques. Frank C. Hachman, Boyd L. Fjeldsted and Rodger Weaver of the BEBR staff now use five different computer-based models of Utah and its counties to analyze the impacts of various projects. One of these, the UPED Model, is used to analyze the results of IPP.

The first task is to provide a baseline projection, i.e., a simulation of expected future developments

without the project. The same model is then run again with the addition of the expected scale and timing of the IPP. The differences in outcome are measures of project impacts.

The UPED Model, developed jointly by the Bureau of Economic and Business Research and the Office of the Utah State Planning Coordinator, projects the migration consequences of excess demand or excess supply of labor in each multi-county planning district. The model not only projects totals, but it also shows distribution of the population in terms of age, sex, number of persons in the labor force, and employment by industrial sector.

The analysis presented here of the construction and operations phase measures the impact IPP will have on the Six-County Planning District consisting of Millard, Juab, Sanpete, Sevier, Piute and Wayne Counties, with impacts being concentrated in Millard and Juab. Given the present and expected future components of the area's economy, most of the labor, construction materials, machinery and equipment and capital resources will come from outside the area. As a result, the impacts outside the Six-County area may exceed those within the area. The largest sustained effect over the life of the product will result from the mining and transportation of coal. These activities, if they occur in Utah, will center in Carbon, Emery, Sanpete and/or Sevier Counties.

Construction and Operation

The results of BEBR's analysis of the impacts of plant construction and operation are as follows: The baseline projection for the Six-County area illustrates the sparsely populated rural characteristics of the region. Without the plant, the present population of about 43,500 with employment of about 17,900 can be expected to increase to 71,300 and 27,100 by 1990, and to 81,400 and 33,400 in the year 2000. With the addition of the plant, the population and employment by 1990 will increase to 73,853 and 28,230. (Corresponding magnitudes for other years are shown in Table 1.)

Table 1

**SIX COUNTY AREA
POPULATION, EMPLOYMENT, AND NET MIGRATION
WITH AND WITHOUT CONSTRUCTION AND OPERATION OF IPP
(1980-1990, 1995, 2000)**

Year	Projected Population		Projected Employment		Annual Net Migration		Net Migration as a Percentage of Population	
	With	Without	With	Without	With	Without	With	Without
1980	49,515	49,515	18,689	18,689				
1981	51,997	51,765	19,692	19,574	1,504	1,210	3.0	2.4
1982	54,853	54,383	20,911	20,618	1,835	1,607	3.5	3.1
1983	59,631	56,882	22,990	21,556	3,691	1,384	6.7	2.5
1984	65,646	59,787	25,736	22,702	4,456	1,777	7.5	3.1
1985	71,609	63,626	28,210	24,197	4,680	2,721	7.1	4.6
1986	74,214	65,415	29,143	24,827	992	*	1.4	*
1987	75,644	67,128	29,504	25,432	-186	*	-0.3	*
1988	76,335	68,464	29,558	25,980	-840	*	-1.1	*
1989	75,849	70,114	29,135	26,597	-1,887	*	-2.5	*
1990	73,853	71,307	28,230	27,140	-3,312	*	-4.4	*
1995	79,237	76,488	31,070	29,949	-	-	-	-
2000	83,778	81,424	34,399	33,349	-	-	-	-

* Fewer than 500 or less than 1 percent.

Of special interest are the relative magnitudes of the four categories noted above. The most dramatic effect in the five- to 10 year period results from the large labor force required to construct the power plant and provide power transmission and coal transportation.

The long-term impacts extending for the life of the plant result primarily from fuel requirements providing jobs for coal miners. Utah presently produces nearly 10 million tons of coal per year with approximately 4,300 coal miners. The IPP project, once completed and operating within normal production cycles, will itself require that magnitude of coal production, but the mining employment requirements will depend on whether it is produced with surface or underground mining techniques. In neither case will the employment be near the community of Lynndyl. The longer term effects in the Lynndyl area will result from the 630 employees required to operate and maintain the power plant.

For every worker employed in constructing or operating the power plant, additional jobs in the area will be created to provide the goods and services such as housing, education, and medical care required by workers and their families. Each job in a primary sector has a multiplier effect of creating additional jobs. The essential facts about the economic structure of the Central Utah area and its importing and exporting relationships with other regions have been incorporated into the UPED model. These assumptions in turn yield the estimate that each increment of a job in the area's economic base will generate an additional expansion in this region of .72 jobs in population-serving industries, for a total employment multiplier of 1.72.

Because the area surrounding the site where the plant is to be built is sparsely populated and rural in nature, most of the workers required to staff either the primary or secondary sectors will migrate into the region. The UPED net migration production for the construction phase and the beginning of the operations phase are set out in Table 1. In-migration is expected to peak in 1985, the year before the highest

level of construction activity. Four years of net out-migration will begin in 1987 as the construction phase is completed.

Because the age and family structure of expected in-migrants are projected in the UPED model, it is possible to estimate a number of critical requirements with sufficient precision for planning purposes. Two illustrations demonstrate this process. As the number of children between 5 and 17 years of age is anticipated, the requirements for schools, classrooms, and teachers can be determined. Also, the expected age structure of the impact population permits reliable household formation and dwelling unit requirement projections (homes, apartments, mobile homes, etc.) The dwelling unit requirements impact fluctuates from 3,000 at the peak of construction activity to 803 when construction is completed. This compares to a projected demand of 20,486 dwelling units in 1986 for the region if the project does not materialize. The time paths of these requirements and the school enrollment impacts are shown by Charts 1 and 2. The critically important nature of the boom-bust construction phase is clearly displayed by the charts.

Chart 1. Projected Population and Employment With and Without Construction and Operation of IPP Six County Region

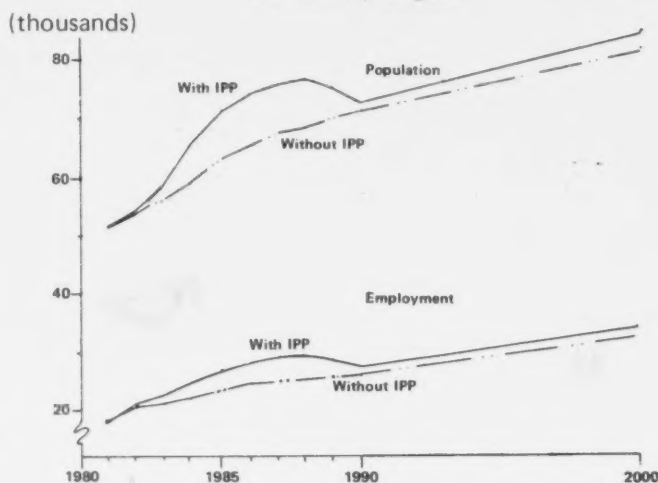
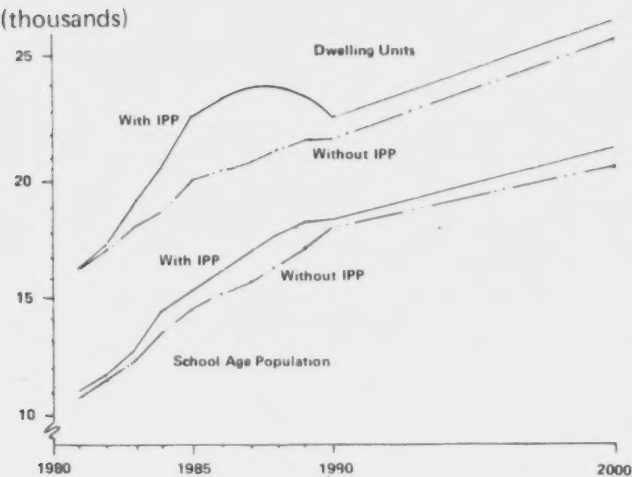


Chart 2.

**Projected School Age Population and Dwelling Units
With and Without Construction and Operation of IPP
Six County Region**



Many other impacts can be estimated with sufficient precision to guide the planning efforts of private and public agencies who must build roads, water and sewer systems, grocery stores, banks, hospitals and the entire network that constitutes a modern community.

One very critical set of choices resting uneasily on the shoulders of private and public planners concerns where required community facilities should be built. One option is to build a new town, another is to centralize population in one or a few existing communities, and still another is to encourage diffusion of growth among existing communities within a reasonable commuting radius of the power plant. But often a decision on such choices is not made carefully and deliberately. The consequences are that both quality of life and economic efficiency suffer compared to the opportunities and advantages that could have been realized from the project.

In summary, the impacts of the construction and operations phases of the IPP will be enormous in terms of changes in population and employment for existing residents and for people who move into the area. The environment of the Six-County region will be greatly altered during the next 10 years — not only by IPP but by other projects such as new cement plants, electronics manufacturing and other developments which are presently planned. The MX missile system, if it is built in Utah and/or Nevada will produce impacts in the area which will dwarf those of IPP.

Coal Sources

Recent statements by IPP representatives indicate a commitment to meet the plant's approximately eight million tons per year coal requirements with coal produced in the State of Utah. If this commitment is maintained, it is most reasonable to expect such coal to be produced from a number of mines in one or more of the following counties: Carbon, Emery, Sanpete, and Sevier. Coal fields in these counties produce high quality, high Btu, low sulfur coal — and it is producible in quantities adequate to the needs of the plant. If all 10 million tons required (assuming 20 percent cleaning and shipping loss) are produced from Utah underground mines, assuming 15 tons of output per worker shift and 260 shifts per worker per year, approximately 2,100 additional coal miners will be required to produce this coal. If all coal to be delivered to IPP represents new employment opportunities, i.e., if none of this coal is diverted to IPP from other production assumed in the four county area's baseline projection, the impacts summarized in Table 2 and Charts 3 and 4 will be generated. Charts 3 and 4 and Table 2 present the same type of baseline (without IPP-related coal mining) and impact figures for the coal source area as Table 1 presents for the vicinity of the plant itself.

Probably the most important difference between the impacts imposed by the plant and those imposed

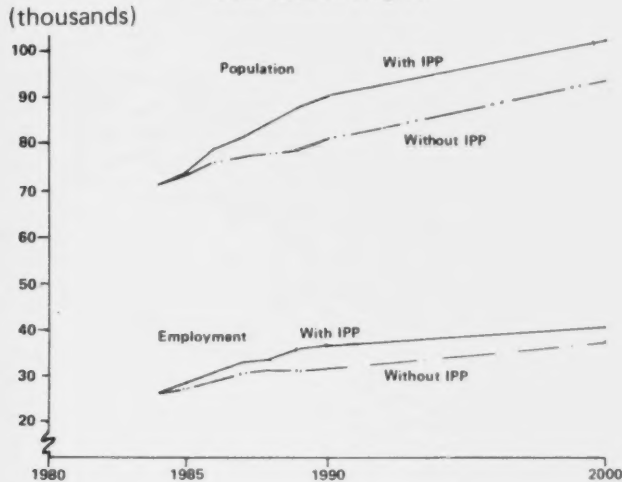
Table 2
COAL SOURCE AREA
POPULATION, EMPLOYMENT, AND NET MIGRATION
WITH AND WITHOUT COAL MINING ASSOCIATED WITH IPP
(1984-1990, 1995, 2000)

Year	Projected Population		Projected Employment		Annual Net Migration		Net Migration as a Percentage of Population	
	With	Without	With	Without	With	Without	With	Without
1984	70,828	70,828	27,596	27,956	2,496	759	3.5	1.1
1985	74,647	72,924	29,658	28,811	3,223	1,492	4.3	2.0
1986	79,335	75,735	31,394	29,617	1,142	*	1.4	*
1987	81,983	77,150	32,525	30,169	2,071	*	2.5	*
1988	85,494	78,502	34,115	30,722	1,634	*	1.9	*
1989	78,580	79,776	35,498	31,274	*	*	*	*
1990	80,29	80,988	36,175	31,824				
1995	98,025	87,279	39,175	34,577	—	—	—	—
2000	101,755	90,620	42,436	37,763	—	—	—	—

*Fewer than 500 or less than 1 percent.

Chart 3.

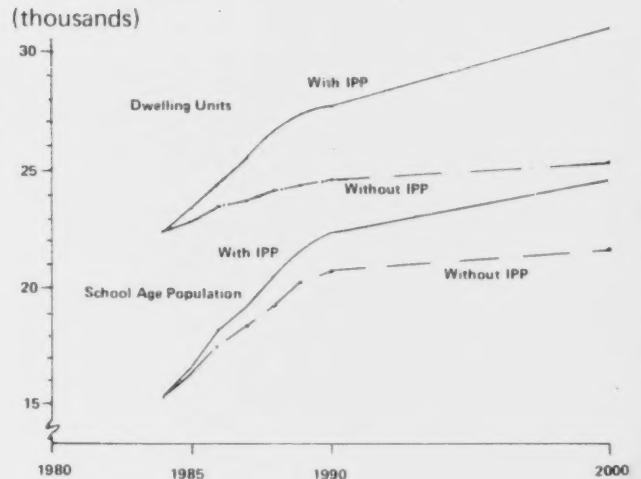
Projected Population and Employment
With and Without Coal Mining for IPP
Coal Source Region



by the related coal mining is the absence in the latter of the boom-bust phenomenon which is the most problematical aspect of the former. The peak-year population impact associated with the construction of the plant is 8,500 additional people in 1986 (from Table 1). The final population impact associated with coal mining, once all adjustments are made, is larger — around 11,000 — but is effectively permanent in duration. This permanence represents a real advantage in both public and private sector decision making as regards provision of such services as housing, streets and sewers, education, retail trade, financial services, etc. The advantage is that permanent facilities expansion is a relatively straightforward experience in capital theory. There will, of course, be some unusually high costs in achieving the magnitude of adjustment needed, but the process and its objectives can be determined relatively easily. In the case of the construction cycle, however, the relatively short period of high impact renders expansion of permanent facilities economically unjustified. In this case, the options such as long distance commuting, half-day and year-round scheduling of education pro-

Chart 4.

Projected School Age Population and Dwelling Units
With and Without Coal Mining for IPP
Coal Source Region



grams, unplanned temporary housing, etc., must be considered.

An important conclusion arising from this analysis is that real costs not likely to be incorporated in the price of electricity produced by IPP are imposed by the decision to locate at Lynndyl rather than near the coal source. (The original Salt Wash proposal site is only marginally better than the Lynndyl site on items of the issue addressed here.) It is recognized that production costs, and therefore electricity prices, will be higher at the Lynndyl site.* This has been thought of as reflecting the price society is willing to pay to maintain the current high level of air quality in the scenic eastern half of the State of Utah. Since the permanent capital acquisition costs associated with coal mining expansion will have to be met regardless of plant location, and since the same facilities could be used for both construction phase-related impacts and subsequent mining-related impacts, virtually all the costs of providing for

*Utah Consortium for Energy Research and Education, *Summary Report, Utah/Great Basin Energy Facilities Siting Study*, Section III.C.

the construction force and related impacts in the Lynndyl area are also attributable to the decision to further separate the plant from its coal source. This cost is not typically recognized. Whether it would tip the balance of benefits and costs in favor of a location closer to the coal source is doubtful. Recognition is, however, essential to future plant location decisions.

Summary

Table 3 and Chart 5 summarize the impacts of the IPP project on non-metropolitan Utah. (Additional impacts in the higher order service centers of Utah and Salt Lake Counties have also been analyzed, but are of relatively minor significance in relation to the baseline levels of activity projected for these areas. They are, therefore, not discussed here.)

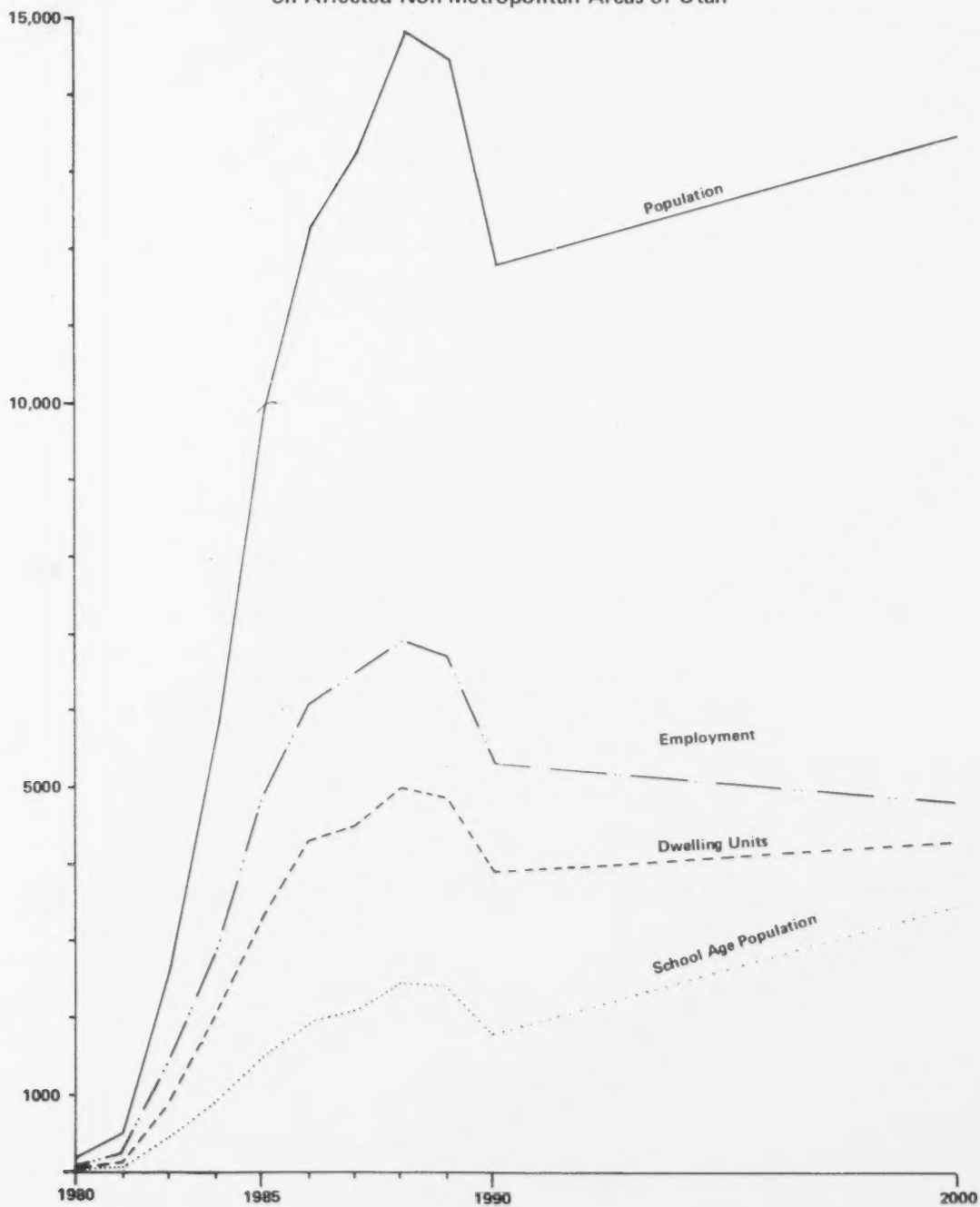
The assessment of such possible events is an ongoing and dynamic undertaking, constantly challenging the research staff. The purpose of this research is to provide information that the project managers, the state and federal governments, and the affected communities can use in their efforts to avoid costly mistakes and gain full advantage from the developments. The potential for improving decisions and avoiding mistakes is increasing dramatically as Utah and the Rocky Mountain area look forward to expanded energy and minerals development and defense activity in the decades ahead.

Table 3

**INCREASES OVER BASELINE ON SELECTED VARIABLES DUE TO CONSTRUCTION AND
OPERATION OF IPP AND SELECTED COAL MINING ON IMPACTED
NON-METROPOLITAN AREAS OF UTAH
(1981-1990, 2000)**

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	2000
Population	232	470	2,793	5,852	9,706	12,399	13,349	14,862	14,539	11,687	13,489
Housing Requirements	79	159	957	2,030	3,342	4,237	4,527	5,030	4,940	3,969	4,370
School Age Population	41	81	463	903	1,522	1,947	2,112	2,421	2,400	1,885	3,493
Employment	188	239	1,434	3,033	4,887	6,093	6,428	6,971	6,761	5,380	4,723

Chart 5.
Net Impacts of Construction and Operation of IPP and Related Coal Mining
on Affected Non-Metropolitan Areas of Utah



Utah Business Statistics

Statewide Statistical Data

	% Chg.				12 Mo. Average Ending		
	Sept. 1979	August 1979	Sept. 1978	From Year Ago	Sept. 1979	Sept. 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) *	42,541	41,330	36,941	15.2	40,497	31,796	27.4
Livestock and Livestock Products (thous. of dol.)	29,395	32,912	27,821	5.7	30,793	24,515	25.6
Crops (thous. of dol.)	13,146	8,418	9,120	44.1	9,702	7,281	33.2
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	70.3	61.1	55.7	26.2	66.9	46.7	43.3
Lambs (cwt)	67.4	57.3	62.2	8.4	62.1	57.2	8.6
Turkeys (per lb.)	.490	.430	.450	8.9	.500	.420	19.0
Milk, Wholesale (cwt)	11.8	11.4	10.4	13.5	11.4	9.9	15.2
Alfalfa Hay, Baled (per ton)	51.5	51.5	45.0	14.4	50.5	51.6	-2.1
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	14,221	15,665	18,897	-24.7	16,340	20,058	-18.5
Calves (thous. of lbs.)	4	6	16	-75.0	8	29	-72.4
Sheep and Lambs (thous. of lbs.)	191	244	215	-11.2	215	223	-3.6
Hogs and Pigs (thous. of lbs.)	2,482	2,738	2,065	20.2	2,240	1,819	23.1
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,086	3,080	2,895	6.6	2,995	2,704	10.8
Investments, Total, Utah Member Banks (mil. of dol.) ^a	825	842	791	4.3	828	754	9.8
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,859	3,723	3,598	7.3	3,749	3,419	9.6
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	46	50	51	-9.8	55	53	3.0
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,243	1,135	1,178	5.5	1,150	1,123	2.4
Time Deposits, Total, Utah (mil. of dol.) ^a	2,570	2,537	2,369	8.5	2,545	2,245	13.4
Savings, Savings and Loan Association (mil. of dol.) ^b	1,649.9	1,636.7	1,487.2	10.9	1,567.6	1,431.0	9.5
Sale of U.S. Savings Bonds - Series E & H (thous. of dol.)	1,983.0	2,000.1	2,309.6	-14.1	2,269.8	2,520.6	-10.0
New Corporations (no.)	343	408	410	-16.3	405	390	3.9
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	31,425.4	136,554.1	28,328.7	10.9	69,538.1	59,815.3	16.3
Sales & Use Tax	3,032.6	79,239.7	2,924.7	3.7	29,822.0	27,784.8	7.3
Motor Fuel Tax	2,687.6	6,114.5	5,515.0	-51.3	5,223.0	4,395.8	18.8
Individual Income Tax	21,024.6	36,567.2	16,115.8	30.5	23,474.1	19,194.1	22.8
Corporation Franchise Tax	1,747.7	1,245.2	1,169.9	49.4	3,232.8	2,786.8	16.0
Employment							
Civilian Labor Force (thous.) ^c	634.9	629.7	603.1	5.3	613.4	577.1	6.3
Total Employed Persons	611.9	598.0	580.5	5.4	585.0	550.0	6.4
Unemployed	23.0	31.7	22.6	1.8	28.3	27.1	4.4
Percent Total Labor Force	3.6	5.0	3.8	-5.3	4.6	4.7	-2.1
Employees on Nonagricultural Payrolls (thous. of jobs)	570.4	556.5	539.5	5.7	548.9	515.2	6.5
Manufacturing	87.2	87.3	83.0	5.1	84.2	78.1	7.8
Mining	18.0	18.0	16.9	6.5	17.3	15.5	11.6
Contract Construction	40.1	40.4	38.1	5.2	36.6	34.6	5.8
Transportation, Communication and Utilities	35.5	35.3	33.0	7.6	33.6	31.0	8.4
Wholesale Trade	35.7	35.5	32.4	10.2	33.9	30.7	10.4
Retail Trade	100.6	99.7	97.2	3.5	99.0	87.0	13.8
Finance, Insurance and Real Estate	26.5	26.5	24.7	7.3	25.5	23.9	6.7
Services ^d	102.7	100.6	93.4	10.0	97.3	88.9	9.4
Federal Government	36.8	36.9	37.2	-1.1	37.0	-37.0	0.0
State Government ^e	30.1	29.6	29.6	1.7	32.0	31.0	3.2
Local Government ^e	57.2	46.7	54.0	5.9	54.3	50.1	8.4
Average Weekly Hours							
Manufacturing	39.1	39.2	39.4	-0.8	39.1	39.7	-1.5
Mining	41.1	42.5	42.2	-2.6	41.8	42.6	-1.9
Contract Construction	38.2	36.4	38.1	0.3	37.5	40.3	-6.9
Wholesale Trade	37.7	38.0	37.9	-0.5	37.4	36.5	2.5
Retail Trade	28.4	28.9	27.6	2.9	28.1	29.0	-3.1
Amount of Unemployment Comp. (thous. of dol.)	2,495.7	3,113.9	2,381.5	4.8	3,868.3	3,163.6	22.3
Construction							
Total Construction (thous. of dol.)	92,198	113,347	128,848	-28.4	116,897	107,247	9.0
Residential	52,890	68,738	58,042	-8.9	62,166	58,292	6.6
Nonresidential	35,851	36,844	55,414	-35.3	41,102	38,447	6.9
Public Works and Utilities	3,457	7,765	15,392	-77.5	13,630	10,631	28.2
Total Permit Construction (thous. of dol.) ^f	103,097.4	136,172.4	108,779.4	-5.2	100,126.0	96,898.9	3.3
Residential	49,244.2	69,101.6	61,092.7	-19.4	56,778.7	64,315.8	-11.7
Nonresidential	43,102.7	60,928.7	42,012.3	2.6	36,648.7	26,692.7	37.3
Additions, Alterations and Repairs	10,750.5	6,142.1	5,674.4	89.5	6,418.6	5,890.4	9.0
New Dwelling Units (no.)	1,297	1,946	1,792	-27.6	1,504	1,923	-21.8
Tourism/Travel							
Air Passengers (total no. on and off)	370,384	463,036	345,302	7.3	379,472	342,928	10.7
Highway Traffic Count Across State Lines	44,933	53,766	50,216	-10.5	38,410	42,109	-8.8
Transient Room Taxes (thous. of dol.)	125.8	404.4	.9	13,877.8	180.8	149.5	20.9
Visits, State, Nat'l. Parks, Monuments (thous.)	1,368.7	1,785.6	1,458.3	-6.1	1,020.6	1,148.8	-11.2
General							
New Cars and Truck Sales	na	na	na	-	na	na	-
C.P.I. (National Index - 1967=100)	223.4	221.1	199.3	12.1	210.8	191.3	10.2
Telephones in Service. (Business)	74,653	74,312	70,986	5.2	72,804	69,051	5.4
Telephones in Service. (Residential)	402,303	395,131	384,206	4.7	392,084	372,166	5.4
Electric Customers (Commercial)	31,864	31,758	30,734	3.7	31,458	29,610	6.2
Electric Customers (Residential)	341,985	341,286	327,134	4.5	337,344	320,422	5.3
Natural Gas Customers (Residential & Commercial)	448,413	446,680	428,685	4.6	449,162	426,903	5.2
Natural Gas Customers (Industrial)	887	875	959	-7.5	917	956	-4.1
Production							
Net Electric Power Utilized (mil. of kwh)	1,030.2	972.0	871.6	18.2	901.2	878.3	2.6
Crude Oil to Refineries (thous. of bbls.)	4,807.7	4,890.4	5,219.5	-7.9	4,995.4	5,171.6	-3.4
Aug. 1979 July 1979 Aug. 1978							
Crude Oil Production (thous. of bbls.)	2,301.3	2,206.5	2,689.0	-14.4	2,691.1	2,832.2	-5.0
Natural Gas Production (mil. of cu. ft.)	5,836.6	5,742.2	6,152.0	-5.7	6,219.1	6,627.1	-6.2
Coal (thous. short tons)	947	818	834	13.5	979	794	23.2
Copper (thous. metric tons) ^g	17,270	16,149	16,180	6.7	15,695	15,785	-0.6

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA				% Chg.	12 Mo. Average Ending		
	Sept. 1979	Aug. 1979	Sept. 1978	From Year Ago	Sept. 1979	Sept. 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)*	404.1	398.2	382.0	5.8	391.6	367.2	6.6
Auth. Permit Construction (mil. of dol.)	64.2	70.4	76.2	-15.7	64.0	62.1	3.1
New Dwelling Units	793	1,226	1,253	-36.7	945	1,232	-23.3
Postal Receipts (thous.)	727.4	3,822.1	3,591.5	3.8	4,430.6	3,919.9	13.0
Electric Customers (Residential)	262,020	261,717	251,310	4.3	259,075	246,630	5.0
Electric Customers (Commercial)	20,814	20,724	19,957	4.3	20,500	9,319	6.1
Natural Gas Customers (Residential)	265,659	264,292	251,669	5.6	264,849	250,583	5.5
Natural Gas Customers (Industrial)	454	448	494	-8.1	471	487	-3.3
Department Store Sales (mil. of dol.)	23,916	28,071	25,707	-7.0	25,734	25,010	2.9
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele) (thous.)*	298.4	299.6	280.6	6.3	288.5	272.4	5.9
Auth. Permit Construction (mil. of dol.)	15.2	10.4	11.4	33.3	11.4	7.4	54.1
New Dwelling Units	12	57	154	-92.2	52.2	77	-32.2
Postal Receipts (thous.)	3,036.6	3,136.6	2,970.6	2.2	3,613.1	2,976.0	21.4
Natural Gas Customers (Residential)	55,763	55,796	55,228	1.0	56,774	55,852	1.7
Natural Gas Customers (Industrial)	167	164	185	-9.7	176	180	-2.4
Telephones in Service. (Business) ^h	41,364	41,185	39,339	5.1	40,398	38,503	4.9
Telephones in Service. (Residential) ^h	205,945	204,240	196,308	4.9	201,337	191,419	5.2
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis) (thous.)*	96.1	93.7	91.7	4.8	94.1	90.7	3.7
Auth. Permit Construction (mil. of dol.)	9.5	6.4	3.1	206.5	6.6	3.0	120.0
New Dwelling Units	47	30	33	42.1	42	32	32.5
Postal Receipts	303.6	286.8	256.6	17.3	348.0	278.4	25.0
Natural Gas Customers (Residential)	20,911	20,855	20,663	1.2	21,208	21,034	0.8
Natural Gas Customers (Industrial)	60	60	65	-7.7	62	69	-9.9
Telephones in Service. (Business) ⁱ	6,921	6,854	6,536	5.9	6,733	6,410	5.0
Telephones in Service. (Residential) ⁱ	42,099	41,843	40,930	2.9	41,485	40,039	3.6
Mountainland (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)*	73.2	67.1	68.6	6.7	69.6	65.0	7.1
Auth. Permit Construction (mil. of dol.)	23.0	31.4	16.0	43.8	19.2	17.5	9.7
New Dwelling Units	236	398	244	-3.3	295	373	-21.0
Postal Receipts (thous.)	509.6	522.3	454.1	12.2	580.5	478.2	21.4
Electric Customers (Residential)	31,746	31,473	30,024	5.7	30,991	29,026	6.8
Electric Customers (Commercial)	2,935	2,914	2,746	6.9	2,872	2,666	7.8
Natural Gas Customers (Residential)	55,479	55,303	52,234	6.2	55,339	51,822	6.8
Natural Gas Customers (Industrial)	90	92	98	-8.2	95	98	-3.2
Provo							
Non-Ag. Employment (thous.) (Utah Co.)*	67.6	62.1	63.5	6.5	64.3	59.8	7.5
Auth. Permit Construction (mil. of dol.)	2.7	2.1	3.8	-28.9	4.7	3.0	56.7
New Dwelling Units	51	34	56	-8.9	70	71	-1.1
Postal Receipts (thous.)	270.0	270.7	252.8	6.8	320.8	250.2	28.2
Natural Gas Customers (Residential)	14,505	14,645	13,773	5.3	14,583	13,931	4.7
Natural Gas Customers (Industrial)	43	43	47	-8.5	46	47	-1.9
Telephones in Service. (Business) ^j	6,181	6,152	6,166	0.2	6,066	5,886	3.1
Telephones in Service. (Residential) ^j	38,823	36,605	37,167	4.5	36,539	34,472	6.0
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non-Ag. Employment (thous.)*	13.4	13.0	12.8	4.7	12.9	11.9	8.4
Auth. Permit Construction (mil. of dol.)	2.0	3.1	2.8	-28.6	2.2	2.2	0.0
New Dwelling Units	36	57	41	-12.2	42.3	44	-3.9
Postal Receipts (thous.)	64.1	60.9	55.4	15.7	70.5	62.0	13.8
Electric Customers (Residential)	8,798	8,762	8,434	4.3	8,619	8,251	4.5
Electric Customers (Commercial)	1,889	1,881	1,917	-1.5	1,906	1,857	2.6
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)*	12.0	11.8	11.3	6.2	11.2	10.2	8.8
Auth. Permit Construction (mil. of dol.)	2.8	11.5	4.3	-34.9	3.1	2.0	55.0
New Dwelling Units	40	28	30	33.3	32	33	-0.3
Postal Receipts (thous.)	42.8	43.1	40.5	5.7	47.8	41.1	16.3
Electric Customers (Residential)	4,770	4,725	4,201	13.5	4,634	4,316	7.4
Electric Customers (Commercial)	747	750	706	5.8	746	709	5.2
Natural Gas Customers (Residential)	5,060	4,981	5,038	0.4	5,144	5,021	2.4
Natural Gas Customers (Industrial)	8	7	8	0.0	8	9	-11.1
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)*	31.2	29.9	29.7	5.1	30.3	28.7	5.6
Auth. Permit Construction (mil. of dol.)	3.9	7.1	4.2	-7.1	3.8	5.6	-32.1
New Dwelling Units	45	87	94	-52.1	65	92	-29.6
Postal Receipts (thous.)	151.6	187.3	147.3	2.9	204.1	155.7	31.1
Electric Customers (Residential)	13,851	13,831	13,299	4.2	13,615	13,081	4.1
Electric Customers (Commercial)	1,698	1,708	1,658	2.4	1,683	1,623	3.7
Natural Gas Customers (Residential)	23,050	22,864	22,304	3.3	23,202	22,375	3.7
Natural Gas Customers (Industrial)	50	48	50	0.0	48	48	0.0
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)*	20.4	20.2	19.2	6.3	19.4	17.5	10.9
Auth. Permit Construction (mil. of dol.)	2.2	8.5	1.7	29.4	3.1	3.5	-11.4
New Dwelling Units	35	57	35	0.0	31.4	49.9	-37.1
Postal Receipts (thous.)	na	na	na	-	na	na	-
Electric Customers (Residential)	10,557	10,524	10,129	4.2	10,402	9,799	6.2
Electric Customers (Commercial)	1,395	1,390	1,346	3.6	1,383	1,301	6.3
Natural Gas Customers (Residential)	7,986	7,944	7,776	2.7	8,064	7,825	3.0
Natural Gas Customers (Industrial)	15	13	12	25.0	12	12	2.5
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)*	16.8	16.6	15.9	5.7	15.9	14.9	6.7
Auth. Permit Construction (mil. of dol.)	5.0	4.1	3.6	38.9	4.9	4.2	16.7
New Dwelling Units	112	93	95	17.9	89.4	102	-12.4
Postal Receipts (thous.)	84.7	91.7	76.9	10.1	97.4	70.9	37.4
Electric Customers (Residential)	10,243	10,254	9,737	5.2	10,012	9,317	7.5
Electric Customers (Commercial)	2,386	2,391	2,404	-0.7	2,365	2,153	9.8

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Traffic Count: Utah Department of Transportation, Travel
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Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile
Dealers Registrations Service Company
Telephone, electric, natural gas customers:
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Net Electric Power Utilized: cooperating
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Crude Oil to Refineries: cooperating
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Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^aEnd of Period, includes member banks of Federal Reserve
System
- ^bAs of the close of business on last day of the month
- ^cCurrent year—preliminary data; previous
year—final figures.
- ^dIncludes nonprofit and religious
- ^eIncludes public schools and colleges
- ^fTotal new construction plus additions, alterations and
repairs
- ^gBeginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231
- ^hIncludes Salt Lake County and Bountiful
- ⁱIncludes Weber and Morgan Counties
- ^jIncludes Orem and Springville
- ^rrevised
- x increase from zero or decrease to zero
- na not available

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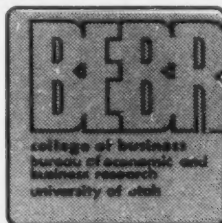
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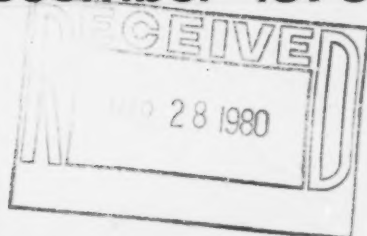
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Utah's Great Basin Region Energy Facility Siting Study

by Rodger Weaver, Senior Research Economist

Editor's Note: *This is the first in a series of Utah Economic and Business Review articles discussing the findings of a major study by the Utah Consortium for Energy Research and Education (UCERE) on the suitability of the Great Basin portion of the State of Utah as a host area for the siting of a substantial volume of electricity generation capacity to serve Western States energy markets.*

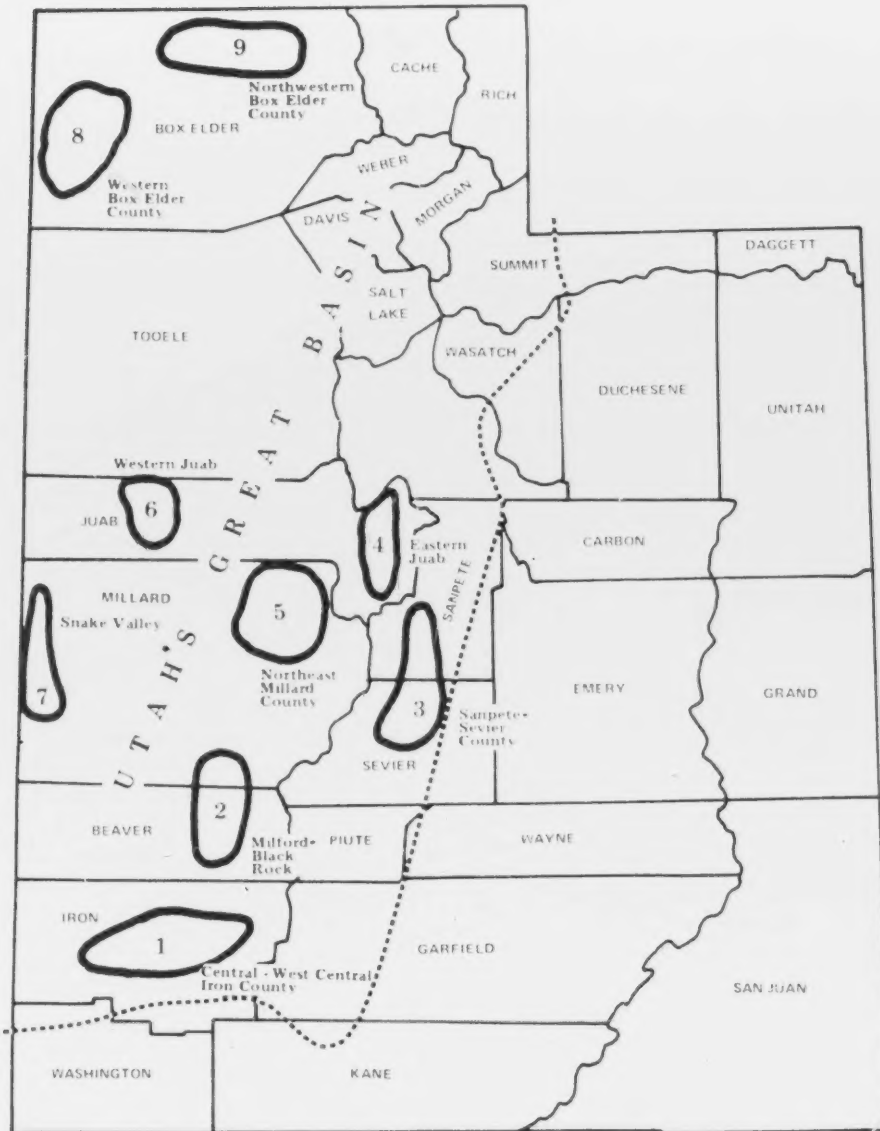
The Consortium consists of the University of Utah, Utah State University and Brigham Young University. Project coordinator is Dr. Ronald J. Pugmire, associate vice president for research at the University of Utah. Principal investigators on the project are R. Thayne Robson, University of Utah, Terrence F. Glover, Utah State University, and Richard M. Oveson, Brigham Young University. The project was funded by the U.S. Department of Energy under Contract No. DE/ASO 3-77 SFO-1484.

The overall scope and purpose of the work, entitled "The Utah/Great Basin Energy Facility Siting Study," along with a summary of its major findings, conclusions and recommendations are discussed here. Subsequent articles in the series will deal with other major components of the study.

-
- Abundant air resources (i.e., lack of excessive air quality restrictions)
 - Sparse population
 - Adequate water supply
 - Intermediate location relative to fuel resources (coal) and West Coast energy markets

These characteristics, which make Utah's western desert area — the Utah portion of the Great Basin region — the most acceptable area in the state for Intermountain Power Project's huge coal-fired power generating plant, also provide the area with important potential for the siting of substantial

Figure 1
Potential Power Plant Siting Zones
in the Great Basin Area of Utah



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additional electricity generation capacity. This is the conclusion reached by the Utah Consortium for Energy Research and Education in its recently completed Utah/Great Basin Energy Facility Siting Study (the "Great Basin Study") for the U.S. Department of Energy.

Described as a "siting zone prequalification process," the study had as its ultimate objective the identification of a set of zones (geographic areas) within which exist a number of suitable specific sites for specific power plant projects. The result has been naming by the investigators of nine such zones in Utah as suitable for in-depth consideration as potential areas within which power plant sites can — in all probability — be located. These zones, shown in Figure 1, include:

1. Central-West Central, Iron County.
2. The Milford-Black Rock area of Beaver and Millard Counties (including the area of Roosevelt Springs for studying coal-geothermal hybrid generation).
3. Sanpete-Sevier County.
4. Eastern Juab County.
5. Northeast Millard County.
6. Western Juab County in the Fish Springs Flat area.
7. Southeast Snake Valley near the Nevada border.
8. Western Box Elder County
9. Northwestern Box Elder County

No claim is made that these zones include all the possible power plant sites in Utah's Great Basin area. Further study may result in identification of other suitable sites.

According to the summary report prepared by the Consortium, determination of siting zone suitability requires "reasonable assurance that sites (in the zone) will meet all environmental and administrative standards and, therefore, qualify for actual construction and operation of plants."

Such prequalification is intended to reduce the likelihood of preparation of power plant proposals for areas which appear to be unable to satisfy environmental standards. Proposal preparation and governmental responses to such proposals are extremely costly — in both time and money. Therefore, the kind of prequalification work done in the Great Basin Study is intended to insure that such costs are incurred only in proposals which have reasonable chance for success.

Among the important questions addressed by the research team in its consideration of the prequalification issue are the following:

1. Does expected future growth in demand for electric power justify efforts to identify and evaluate potential power plant siting zones in the Western U.S. and in particular in Utah's Great Basin region?

2. What technologies would be most appropriate for the different zones and what plant sizes appear appropriate from both private and social decision making viewpoints, if generation facilities are to be located in the Great Basin area of Utah?

3. Under what conditions would the siting of plants in the various zones be economically feasible, given that environmental considerations indicate the capacity of the zones to support a large volume of electricity generation?

4. How would the economies of the local area and of the state be affected by power plant development? To what extent would the indigenous population benefit from the higher income construction and operations jobs? How much of this labor force would consist of immigrants? What additional load would be placed on public and private suppliers of goods and services? What would be the magnitude of the boom-bust cycle associated with plant construction and how could this problem be mitigated?

5. How does the legal-regulatory process work in qualifying specific power plant projects, and how can public and private parties work efficiently together to insure that private development interests can be pursued while maintaining compliance with environmental standards and requirements, and implementing projects in such a way as to impose minimal social and economic disruption resulting from power plant construction and operation?

6. How could technical analysis of these issues be interfaced with the state's political structure and processes in order to insure that issues relevant to ultimate siting decisions would be addressed, and that the findings of the study would be incorporated in the decision process?

To answer these questions and accomplish the study objectives, the following set of six work items or "project tasks" were outlined:

1. Review and evaluate available energy facility siting literature.

2. Collect and assess electricity demand methodologies and evaluate the ranges of plausible future demand growth scenarios in the Western United States through the next two decades.

3. Conduct an initial screening of Utah's Great Basin region to identify those areas which should be excluded (on institutional and environmental grounds) from further consideration as potential power plant siting zones, thereby identifying the remaining areas for in-depth analysis.

4. Develop weighting factors and implement an aggregation technique for evaluating the desirability of the alternative siting zones.

5. Conduct siting zone-specific analyses of (a) environmental impacts and restrictions, (b) seismic evaluations, (c) siting zone appropriate technology, (d) appropriate plant sizing, (e) fuel source considerations, (f) economic feasibility, including fuel transportation and power transmission, (g) socioeconomic impacts, (h) water quality and quantity considerations.

6. Conduct a case study of the legal-regulatory process as it has been implemented in the case of the Intermountain Power Project (IPP), in order to determine its strengths and weaknesses as a mechanism for reconciling conflicting interests relating to capacity expansion, environmental protection, economic development, and socioeconomic impact mitigation.

Work on each of these tasks has resulted in the production of separate monographs detailing the methodologies and information sources utilized and setting out the findings and conclusions in each instance. While several of these monographs will serve as the basis for future articles in this "energy facility" series, it is appropriate that a brief summary of the study's basic findings be presented here. Specifically, these are that:

1. Average annual growth in demand for electricity in the Western United States through the year 2000 will be in the range of 2.7 to 4.7 percent. (The 4.7 percent of growth rate represents current expectations of the utility companies presently generating electricity in the Western States.)

2. By coupling past experience with present policy and practice, a set of factors can be identified and utilized to screen specific geographical areas in terms of suitability as power plant sites.

3. Factors which may constitute barriers to or constraints against power plant siting in any specific area are (a) air quality deterioration, (b) water availability and its current and alternative uses, (c) lands designated for incompatible uses, (d) endangered animal or plant species, (e) surface slope restrictions, (f) known earthquake faults or areas with seismic problems, (g) adverse and unacceptable socioeconomic impacts, (h) regulatory delays or excessive costs, (i) uneconomic transportation requirements, and/or (j) availability of coal as fuel source.

4. Larger power plants have a demonstrated superiority over smaller plants in terms of thermal efficiency, capital costs per unit of output, and unit costs of operation and maintenance.

5. Economic feasibility of proposed projects must be evaluated in terms of all factor inputs and all costs — including environmental costs.

6. Present knowledge and technology make possible the development of planning and management programs to facilitate adjustments with respect to the socioeconomic impacts on specific sites.

7. Sufficient coal exists in Utah and surrounding states to supply any foreseeable level of power generation in the Great Basin. However, differences in coal quality and in mining

and transportation costs will require site analysis to be particularly sensitive to these factors.

8. Energy development in the Great Basin area will undoubtedly involve transfer of much presently developed water from agricultural to energy uses.

9. Present regulations regarding power plant siting in the Great Basin do not adversely affect the proposed construction of Intermountain Power Project's facility in Millard County.

10. Availability of geothermal resources in the Great Basin warrants further study of this energy source.

In summary, one of the most important findings of the investigators is that technical analytical research of the kind conducted by the Utah Consortium for Energy Research and Education in the Great Basin Study can be successfully interfaced with the requirements of public and private sector decision makers. In light of this finding, the Utah Energy Conservation and Development Council has recommended that the Utah/Great Basin Energy Facility Siting Study be extended to include the entire State of Utah. It is also strongly recommended that such analysis be extended to include contiguous areas of Nevada, Wyoming and Colorado, and that explicit analysis of tradeoffs in these areas among all types of potential energy development be undertaken.

Utah Business Statistics

Statewide Statistical Data	% Chg.				12 Mo. Average Ending		
	Oct. 1979	Sept. 1979	Oct. 1978	From Year Ago	Oct. 1979	Oct. 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	51,615	50,981	43,998	17.3	41,131.8	32,644	26.0
Livestock and Livestock Products (thous. of dol.)	39,482	36,072	34,944	13.0	31,171.2	25,133	24.0
Crops (thous. of dol.)	12,132	14,909	9,049	34.1	9,958.9	7,511.8	32.6
Avg. Prices Rec'd by Farmers (15th of each mo.) (dol.)							
Beef Steers and Heifers (cwt) (thous.)	68.00	70.30	56.40	20.6	67.9	48.2	40.9
Lambs (cwt)	65.50	67.40	61.00	7.4	62.5	57.9	7.9
Turkeys (per lb.)	46.0	49.0	50.0	8.0	0.5	43	16.3
Milk, Wholesale (cwt)	12.10	11.80	10.90	11.0	11.5	10.00	15.0
Alfalfa Hay, Baled (per ton)	53.40	51.50	46.00	16.1	51.1	50.9	0.4
Livestock Slaughtered (live weight)							
Cattle (thous. of lbs.)	18,037	14,221	20,041	-10.0	16,173.0	19,911	-18.8
Calves (thous. of lbs.)	na	na	24		na	25	na
Sheep and Lambs (thous. of lbs.)	309	191	280	10.4	217.4	225	-3.4
Hogs and Pigs (thous. of lbs.)	2,987	2,482	2,057	45.2	2,317.5	1,858	24.7
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,157	3,086	2,882	9.5	3,017.9	2,746	9.9
Investments, Total, Utah Member Banks (mil. of dol.) ^a	829	825	801	3.5	830.3	761	9.1
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,909	3,859	3,587	9.0	3,775.8	3,456	9.3
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	55	46	57	3.5	54.8	53.5	2.4
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,289	1,243	1,150	12.1	1,161.6	1,129	2.9
Time Deposits, Total, Utah (mil. of dol.) ^a	2,565	2,570	2,380	7.8	2,560.4	2,276	12.5
Savings, Savings and Loan Association (mil. of dol.) ^b	1,670.6	1,649.9	1,478.6	13.0	1,583.6	1,443.9	9.7
Sale of U.S. Savings Bonds - Series E & H (thous. of dol.)	5,177.0	1,983.0	2,321.3	123.0	2,507.8	1,725.2	45.4
New Corporations (no.)	442	343	391	13.0	409.3	395	3.6
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	41,625.8	31,425.4	33,975.3	22.5	70,175.6	60,483.1	16.0
Sales & Use Tax	15,107.6	3,032.6	8,232.3	83.5	30,394.9	37,806.1	-19.6
Motor Fuel Tax	8,086.2	2,687.6	6,173.1	31.0	5,382.4	4,575.0	17.6
Individual Income Tax	10,970.2	21,024.6	9,554.1	14.8	23,592.1	19,479.0	21.1
Corporation Franchise Tax	3,571.7	1,747.7	5,168.3	30.9	3,099.8	2,829.5	9.6
Employment							
Civilian Labor Force (thous.) ^c	632.3	634.9	596.5	0.4	613.2	580.2	5.7
Total Employed Persons	609.3	611.9	574.8	6.0	587.9	553.3	6.3
Unemployed	23.0	23.0	21.7	6.0	28.4	26.8	6.0
Percent Total Labor Force	3.6	3.6	3.6	0.0	4.6	4.6	0.0
Employees on Nonagricultural Payrolls (thous. of jobs)	574.0	570.4	542.4	5.8	551.5	518.3	6.4
Manufacturing	87.6	87.2	84.1	4.2	84.5	78.7	7.4
Mining	17.9	18.0	17.0	5.3	17.4	15.6	11.5
Contract Construction	39.4	40.1	37.1	6.2	36.8	34.6	6.4
Transportation, Communication and Utilities	35.1	35.5	32.7	7.3	33.8	31.2	8.3
Wholesale Trade	35.5	35.7	32.0	10.9	34.2	30.9	10.7
Retail Trade	101.5	100.6	97.1	4.5	99.4	87.4	13.7
Finance, Insurance and Real Estate	26.3	26.5	24.8	6.0	25.6	24.1	6.2
Services ^d	104.2	102.7	94.0	10.9	98.2	89.6	9.6
Federal Government	36.2	36.8	36.3	0.3	37.0	37.0	0.0
State Government ^e	34.0	30.1	33.7	0.9	32.0	31.3	2.2
Local Government ^f	56.3	57.2	53.5	5.2	54.5	50.6	7.7
Average Weekly Hours							
Manufacturing	38.3	39.1	38.6	-0.8	39.1	39.6	-1.3
Mining	41.9	41.1	42.5	1.4	41.8	42.7	-2.1
Contract Construction	37.9	38.2	40.0	5.3	37.3	40.1	-7.0
Wholesale Trade	37.5	37.7	37.0	1.4	37.4	36.6	2.2
Retail Trade	28.2	28.4	27.9	1.1	28.1	28.9	-2.8
Amount of Unemployment Comp. (thous. of dol.)	2,702.5	2,495.7	2,522.6	7.1	3,883.3	3,179.1	22.2
Construction							
Total Construction (thous. of dol.)	146,874	92,108	109,933	33.6	119,975.4	108,317	10.8
Residential	56,727	52,890	67,982	16.6	61,228.1	59,053	3.7
Nonresidential	86,016	35,851	27,928	208.0	45,942.7	38,118	20.5
Public Works and Utilities	4,131	3,457	14,023	70.5	12,805.7	11,269	13.6
Total Permit Construction (thous. of dol.) ^f	137,295.1	103,097.4	90,770.4	51.3	104,003.1	96,473.3	7.8
Residential	49,370.9	49,244.2	55,480.0	11.0	56,269.6	63,955.6	-12.0
Nonresidential	77,087.6	43,102.7	29,249.0	163.6	40,635.3	27,572.0	47.4
Additions, Alterations and Repairs	10,836.6	10,750.5	5,741.4	88.7	6,843.2	6,022.7	13.6
New Dwelling Units (no.)	1,336	1,297	1,471.0	9.2	1,492.8	1,889.8	-21.0
Tourism/Travel							
Air Passengers (total no. on and off)	355,455	370,384	326,730	8.8	381,865.8	345,381	10.6
Highway Traffic Count Across State Lines	38,847	44,933	41,270	5.9	38,208	41,502	-7.9
Transient Room Taxes (thous. of dol.)	151.2	125.8	47.9	215.7	189.4	151.6	24.9
Visits, State, Nat'l. Parks, Monuments (thous.)	732.7	1,368.7	755.4	3.0	1,018.7	1,148.4	-11.3
General							
New Cars and Truck Sales	225.4	223.4	200.9	12.2	212.8	192.6	10.5
C.P.I. (National Index - 1967=100)	75.163	74.653	71.520	5.1	73,107.6	69,410	5.3
Telephones in Service, (Business)	404,326	402,303	387,199	4.4	393,511.3	373,957	5.2
Telephones in Service, (Residential)	32,105	31,864	30,891	3.9	31,559.2	29,809	5.9
Electric Customers (Commercial)	343,638	341,985	329,924	4.2	338,489	322,060	5.1
Electric Customers (Residential)	357,285	357,234	343,272	4.1	357,541	339,150	5.4
Natural Gas Customers (Residential & Commercial)	635	617	663	-4.2	659	670	-1.7
Natural Gas Customers (Industrial)							
Production							
Net Electric Power Utilized (mil. of kwh)	957.7	1,030.2	925.5	3.5	903.9	893.5	1.2
Crude Oil to Refineries (thous. of bbls.)	4,864.5	4,807.7	5,317.2	-8.5	4,957.7	5,164.5	-4.0
	(Sept. '79)	(Aug. '79)	(Sept. '78)		(Sept. '79)	(Sept. '78)	
Crude Oil Production (thous. of bbls.)	2,266.0	2,301.3	2,702	-16.1	2,654.8	2,835.4	-6.4
Natural Gas Production (mil. of cu. ft.)	6,284.8	5,836.6	6,403.8	-1.9	6,209.2	6,609.5	-6.1
Coal (thous. short tons)	1,327	947	1,130	17.4	995.4	828	20.2
Copper (thous. metric tons) ^g	15,486	17,270	16,480	-6.0	15,612.2	15,785	-1.1

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA	Oct. 1979	Sept. 1979	Oct. 1978	% Chg.	12 Mo. Average Ending		
				From Year Ago	Oct. 1979	Oct. 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non Ag. Employment (thous.)*	406.2	404.1	384.8	5.6	393.4	369.4	6.5
Auth. Permit Construction (mil. of dol.)	83.8	64.2	55.8	50.2	66.3	62.2	6.6
New Dwelling Units	812	793	948	14.3	933.7	1,215	23.2
Postal Receipts (thous.)	4,494.2	3,727.4	4,285.1	4.9	4,448	3,980.9	11.7
Electric Customers (Residential)	263,364	262,020	253,281	4.0	259,915	247,896	4.8
Electric Customers (Commercial)	20,934	20,814	20,034	4.5	20,575	19,447	5.8
Natural Gas Customers (Residential)	265,524	265,659	254,643	4.3	265,755	251,700	5.6
Natural Gas Customers (Industrial)	466	454	493	5.5	468.8	485	-3.3
Department Store Sales (mil. of dol.)	25,916	23,916	23,121	12.1	25,966.9	25,001	3.9
Salt Lake City							
Non Ag. Employment (Salt Lake and Tooele) (thous.)*	309.1	298.4	283.9	8.9	290.6	273.8	6.1
Auth. Permit Construction (mil. of dol.)	34.6	15.2	9.3	272.0	13.5	7.7	75.3
New Dwelling Units	13	12	51	74.5	49.0	74	-33.8
Postal Receipts (thous.)	3,722.9	3,036.6	3,537.0	5.3	3,628.6	3,024.4	20.0
Natural Gas Customers (Residential)	55,572	55,763	55,609	0.1	56,770.9	55,924	1.5
Natural Gas Customers (Industrial)	168	167	186	9.7	174.5	180	-3.1
Telephones in Service, (Business)	41,619	41,364	39,585	5.1	40,567.5	38,670	4.9
Telephones in Service, (Residential)	206,677	205,945	197,689	4.5	202,086.0	192,265	5.1
Ogden							
Non Ag. Employment (Weber, Morgan, Davis) (thous.)*	97.1	96.1	91.7	5.9	94.6	91.1	3.8
Auth. Permit Construction (mil. of dol.)	5.9	9.5	3.9	51.3	6.8	3.2	112.5
New Dwelling Units	118	47	51	131.4	47.6	35	36.0
Postal Receipts	334.3	303.6	316.4	5.7	349.5	280.9	24.4
Natural Gas Customers (Residential)	20,892	20,911	20,843	0.2	21,212.1	21,041	0.8
Natural Gas Customers (Industrial)	63	60	65	3.1	61.8	69	-10.4
Telephones in Service, (Business)	6,950	6,921	6,610	5.1	6,761.3	6,435	5.1
Telephones in Service, (Residential)	42,238	42,099	41,109	2.7	41,579.1	40,180	3.5
Mountainlands (Utah, Wasatch, Summit Counties)							
Non Ag. Employment (thous.)*	73.2	73.1	68.8	6.4	70.0	65.3	7.2
Auth. Permit Construction (mil. of dol.)	19.3	23.0	18.0	7.2	19.3	17.2	12.2
New Dwelling Units	278	236	258	7.8	296.7	356.1	-16.7
Postal Receipts (thous.)	571.0	509.6	488.7	16.8	587.4	484.1	21.3
Electric Customers (Residential)	31,935	31,746	30,287	5.4	31,128.3	29,258	6.3
Electric Customers (Commercial)	2,964	2,935	2,756	7.5	2,890.3	2,688	7.5
Natural Gas Customers (Residential)	55,489	55,479	53,116	4.5	55,536.8	52,044	6.7
Natural Gas Customers (Industrial)	96	90	99	3.0	94.8	98	-3.3
Provo							
Non Ag. Employment (thous.) (Utah Co.)*	68.1	67.6	63.8	0.8	64.3	60.2	6.8
Auth. Permit Construction (mil. of dol.)	4.6	2.7	3.0	53.3	4.8	3.1	54.8
New Dwelling Units	101	51	53	90.6	74.0	70.5	5.0
Postal Receipts (thous.)	319.1	270.0	284.1	12.3	323.7	253.1	27.9
Natural Gas Customers (Residential)	14,568	14,505	14,057	3.6	14,625.6	13,984	4.6
Natural Gas Customers (Industrial)	43	43	48	10.4	45.6	47	-3.0
Telephones in Service, (Business)	6,253	6,181	6,220	0.5	6,068.8	5,932	2.3
Telephones in Service, (Residential)	39,149	38,823	37,516	4.4	36,675.1	34,685	5.7
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non Ag. Employment (thous.)*	13.7	13.4	12.8	7.0	13.0	12.0	8.3
Auth. Permit Construction (mil. of dol.)	1.6	2.0	1.9	15.8	2.2	2.2	0.0
New Dwelling Units	23	36	44	47.7	40.6	43.7	-7.1
Postal Receipts (thous.)	64.9	64.1	60.5	7.3	70.9	62.6	13.3
Electric Customers (Residential)	8,799	8,798	8,433	4.3	8,650	8,279	4.5
Electric Customers (Commercial)	1,895	1,889	1,930	1.8	1,903	1,872	1.7
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non Ag. Employment (thous.)*	11.5	12.0	10.8	6.5	11.3	10.1	9.7
Auth. Permit Construction (mil. of dol.)	1.0	2.8	1.2	16.7	3.1	2.2	40.9
New Dwelling Units	17	40	30	43.3	30.9	32.4	-4.6
Postal Receipts (thous.)	45.3	42.8	42.2	7.3	48.1	41.6	15.6
Electric Customers (Residential)	4,789	4,770	4,496	6.5	4,658.4	4,345	7.2
Electric Customers (Commercial)	753	747	742	1.5	746.9	717	4.2
Natural Gas Customers (Residential)	4,624	4,571	4,587	0.8	4,666.1	4,573	2.0
Natural Gas Customers (Industrial)	7	8	9	22.2	7.8	9	-13.3
Bear River (Box Elder, Cache, Rich Counties)							
Non Ag. Employment (thous.)*	32.0	31.2	30.6	4.6	30.4	28.9	5.2
Auth. Permit Construction (mil. of dol.)	3.4	3.9	4.1	17.1	3.7	5.6	-33.9
New Dwelling Units	81	45	80	1.3	65.1	92.4	-29.5
Postal Receipts (thous.)	194.5	151.6	184.7	5.3	204.9	180.8	13.3
Electric Customers (Residential)	13,900	13,851	13,376	3.9	13,658.7	13,130	4.0
Electric Customers (Commercial)	1,709	1,698	1,665	2.6	1,686.7	1,631	3.4
Natural Gas Customers (Residential)	23,082	23,050	22,563	2.3	23,245	22,447	3.6
Natural Gas Customers (Industrial)	51	50	50	2.0	48.1	48	0.2
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non Ag. Employment (thous.)*	20.2	20.4	19.0	6.3	19.5	17.6	10.8
Auth. Permit Construction (mil. of dol.)	5.2	2.2	11.0	52.7	2.6	2.7	-3.7
New Dwelling Units	61	35	37	65	33	49	-33
Postal Receipts (thous.)	na	na	61.5	na	na	na	na
Electric Customers (Residential)	10,585	10,557	10,138	4.4	10,439	9,860	5.9
Electric Customers (Commercial)	1,400	1,395	1,361	2.9	1,386	1,313	5.6
Natural Gas Customers (Residential)	8,566	8,475	8,363	2.4	8,559	8,311	3.0
Natural Gas Customers (Industrial)	15	15	12	25	12.3	12	2.5
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non Ag. Employment (thous.)*	16.3	16.8	15.5	5.2	16.0	15.0	6.7
Auth. Permit Construction (mil. of dol.)	2.3	5.0	1.7	35.3	5.0	4.6	8.7
New Dwelling Units	64	112	45	42.2	91.0	106	-14.5
Postal Receipts (thous.)	92.1	84.7	84.1	9.5	98.1	71.6	37.0
Electric Customers (Residential)	10,266	10,243	9,913	3.6	10,041	9,423	6.6
Electric Customers (Commercial)	2,450	2,386	2,403	2.0	2,369	2,166	9.4

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BUSINESS STATISTICS Sources and Footnotes

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Savings, Savings and Loan Association: Utah savings and
loan institutions
U.S. Savings Bonds: U.S. Treasury Department
New Corporations: Utah Secretary of State
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Security
Construction: Dodge Construction Statistics and BEBR
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service
Traffic Count: Utah Department of Transportation, Travel
Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest
Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile
Dealers Registrations Service Company
Telephone, electric, natural gas customers:
cooperating Utah utility companies
Net Electric Power Utilized: cooperating
Utah power companies
Crude Oil to Refineries: cooperating
Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^a End of Period, includes member banks of Federal Reserve
System
- ^b As of the close of business on last day of the month
- ^c Current year—preliminary data; previous
year—final figures.
- ^d Includes nonprofit and religious
- ^e Includes public schools and colleges
- ^f Total new construction plus additions, alterations and
repairs
- ^g Beginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231
- ^h Includes Salt Lake County and Bountiful
- ⁱ Includes Weber and Morgan Counties
- ^j Includes Orem and Springville
- ^k revised
- ^x increase from zero or decrease to zero
- na not available

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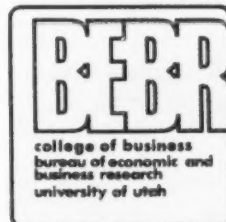
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Electricity Demand Forecasting: A Survey of Methodologies and Projections

by *Rodger Weaver*, Senior Research Economist

Editor's Note:

As reported in last month's issue of the Utah Economic and Business Review, nine geographic areas of Utah have been identified by the Utah Consortium for Energy Research and Education (UCERE) as "suitable power plant siting zones."

Work of the Consortium resulted in the "Utah/Great Basin Energy Facility Siting Study" report, prepared for the U.S. Department of Energy. University of Utah, Utah State University and Brigham Young University are the Consortium members; Dr. Ronald J. Pugmire, associate vice president for research at the University of Utah, is project coordinator. Principal investigators on the project are R. Thayne Robson, University of Utah; Terrence F. Glover, Utah State University, and Richard M. Oveson, Brigham Young University. The project was funded by the U.S. Department of Energy under Contract No. DE/ASO 3-77 SFO-1484.

One of the major questions addressed by the UCERE study committee as a basis for their plant siting zone selection was that of electrical energy demand over the next two decades. Bureau of Economic and Business Research Senior Economist Rodger Weaver was assigned the research on this important issue. Dr. Weaver's findings, analyses and conclusions are summarized in the article which follows.

Growth in demand for electricity in the Western United States during the next two decades will be in the range of from 2.7 to 4.7 percent per year. The higher growth rate (4.7 percent) represents current expectations of the utility companies presently generating electricity in the West. Basically, it indicates a continuation of the demand growth behavior during the 1970s.

The lower rate (2.7 percent per year) is produced from a synthesis of low growth-conservation oriented projections for a number of electricity service areas. It can be taken as a lower limit to a reasonable range of projections in the sense that truly drastic governmental policies combined with heretofore unheard of rates of growth in electricity prices would probably be required to produce a lower rate of consumption.

A primary finding of the Utah Energy Consortium — based on methodologies and projections which will be discussed in the remainder of this article — is that lacking some presently unspecified major changes in consumption patterns, the task of satisfying the electricity needs of the Western States until the year 2000 will require capacity expansion of approximately 3000 to 5000 megawatts (MW) per year.

In considering the demand side of the market, the objective has been to collect and evaluate the existing literature on projection methodologies in order to establish a set of criteria against which individual projection series can be evaluated. Demand projections for the Western United States have been collected from a wide variety of sources and have been evaluated in terms of the findings of the review of the modeling-methodology literature.

The purpose of this review was not to set forth a best or most likely projection, but rather to identify the major influences on future demand for electricity and to investigate current thinking as to how these influences operate in general and what they may imply for future generation capacity expansion in the West. Neither selection of a single most likely projection nor independent production of a new set of demand forecasts was intended. For the purposes of the present project, it has been sufficient to synthesize a reasonable range of values within which electricity consumption can be expected to grow over the next two decades.

1. Electricity Consumption in the Eleven Western States — History and the Future

In analysis and projection of demand for electrical energy two separate but related measures of consumption must be addressed. The first, and intuitively most obvious in terms of meaning and importance, is referred to either as *energy* or *load*. This measure deals with the total amount of electrical energy produced and consumed over a specified amount of time, and is usually expressed as some multiple of watt hours — kilowatt hours (kwh) or gigawatt hours (gwh) — per year or, less frequently, as average energy for a year. The most obvious function of the energy or load measure is as an indication of

the amount of primary energy resources — coal, oil, natural gas, nuclear fuel, flowing water — required to meet a year's electricity consumption requirement.

Human activity is organized in such a way that electricity usage is not distributed uniformly through time. During some periods of the day, for example, few residential appliances are in operation. In the morning and early evening hours, however, larger numbers of such appliances are in use. Similarly, because of the preference for day shift timing of manufacturing, commercial, governmental, etc., activities, these customer classes also tend to exhibit periods of relatively light and relatively heavy usage throughout the day. Thus, temporal patterns of human activity tend to organize load into periods of heavy and light energy requirements. This phenomenon is known as load peaking and leads to the second important measure of electricity usage, *peak load* or *demand*.

Peak load, usually measured in megawatts (MW), is defined as the maximum power required during a very short period of time (formally, a single instant) within the overall projection interval (year). In addition to the daily peaking phenomenon discussed above, energy use viewed across a year exhibits peaks which are largely weather-related. Areas which experience severe winters are subject to winter peaks due to space heating requirements, while hot summer areas experience summer peaks due to air conditioning usage. Another factor in the yearly peaking is the seasonality of certain economic activities. The prime case is agriculture where irrigation pumping requirements tend to contribute to a summer peak.

The importance of a utility's peak load forecast is that this figure represents the total power the utility must be able to supply either through use of its own generators, by purchase from other utilities, or some combination of its own generation plus purchases during the year. With current technology, it is possible but not feasible to generate energy during periods of off peak load and store it for transmission and distribution during peak periods. Thus, the system must maintain at all times the capacity to meet peak load, even if the peak period is very short and load during most of the year is substantially

below peak. One of the main reasons for the development of widespread inter-ties among utilities is to enable individual systems to purchase peaking power from other systems whose peaks occur at different times of day and of the year.

The importance of the peaking problem derives from the high cost of constructing generation facilities. The cost of construction of larger coal fired power plants ranges into the hundreds of millions of dollars, and nuclear plants are still more expensive. Utilities are, of course, reluctant to incur the large debt service expenses of such plants if they are to be used only for peaking purposes. The capital costs of smaller oil and gas fired plants are substantially less than the large base load units and are thus favored as peaking facilities. In terms of operating costs, however, the larger plants are less expensive. (Power plant construction and operation will be discussed in a subsequent article.) Thus, the decision to meet peak loads with cheaper facilities entails the trade-off of higher generation costs.

A. The Recent History of Electricity Consumption in the West

In order to understand the history of electricity usage or to plan for meeting future requirements, it is necessary that both energy (kwh or gwh) data and peak load (MW) data be presented. The Western Systems Coordinating Council (WSCC) is geographically the largest of the nine regional electric utility reliability councils established throughout the United States. All of the territory of the eleven Western States, along with a large portion of British Columbia and small sections of South Dakota and Texas, are included in the WSCC area. The WSCC area constitutes the market which could be served by power plants located in Utah's Great Basin region. The total WSCC area is partitioned into five "power areas" as indicated in Figure 1.

Over the entire interval covered in Table 1, a WSCC-wide peak load increase in excess of 25,000

MW was experienced. This represents an average of 2,500 additional MW capacity required each year, or almost one Intermountain Power Project (IPP) size plant each year. Two other major observations can be drawn from the data presented in Tables 1 and 2; and Figure 2: (1) For the years 1968-78 rapid growth has occurred in both peak and energy loads throughout the Western States and especially in the smaller Rocky Mountain and Arizona-New Mexico power areas; (2) Growth in the second half of the period has been markedly slower, though still substantial, than the first half. For example, for WSCC as a whole,



Source: WSCC Ten-Year Coordinated Summary: 1978-1987, Salt Lake City, Utah, 1978.

peak and energy loads grew at annual rates of 5.4 and 7.1 percent, respectively, from 1968-1972. In the period 1973-1978, growth rates for peak and energy loads were 4.3 and 3.5 percent per year, respectively, well below comparable rates for the first half of the

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Table 1
HISTORICAL FIRM PEAK LOAD BY POWER AREA

Year	Total WSCC		Northwest		Rocky Mountain		Arizona-New Mexico		So. Calif.-Nevada		No. Calif.-Nevada	
	Thous. of MW	Annual Growth Rate (%)	Thous. of MW	Annual Growth Rate (%)	Thous. of MW	Annual Growth Rate (%)	Thous. of MW	Annual Growth Rate (%)	Thous. of MW	Annual Growth Rate (%)	Thous. of MW	Annual Growth Rate (%)
1968	47.8	-	21.2	-	2.23	-	3.52	-	12.6	-	9.1	-
1969	47.9	0.2	20.8	-1.9	2.43	9.0	4.10	16.5	13.2	4.8	9.7	7.2
1970	50.6	5.6	22.0	5.8	2.59	6.6	4.57	11.5	14.0	6.1	10.3	6.6
1971	53.6	5.9	23.9	8.6	2.90	12.0	4.94	8.1	15.8	12.9	11.4	10.7
1972	59.1	10.3	26.3	10.0	3.11	7.2	5.60	13.4	16.8	6.3	12.3	7.9
1973	59.2	0.2	26.3	0.0	3.28	5.5	6.12	9.3	17.2	2.4	12.8	4.1
1974	60.3	1.9	26.7	1.5	3.59	9.5	6.71	9.6	16.8	-2.3	13.6	6.2
1975	63.2	4.8	28.7	7.5	3.75	4.5	6.56	-2.2	17.2	2.4	14.0	2.9
1976	68.7	8.7	29.4	2.4	4.06	8.3	7.02	7.0	18.6	8.1	14.6	4.3
1977	68.0	-1.0	31.0	5.4	4.51	11.1	7.27	3.6	18.8	1.1	14.5	-0.7
1978	72.9	7.2	33.5	8.1	4.59	1.8	7.94	9.2	20.1	6.9	15.8	10.0
1968-78	+25.1	4.3	+12.3	4.7	+2.36	7.5	+4.42	8.5	+7.5	4.8	6.8	5.8

Source: Base data from Western Systems Coordinating Council (WSCC).

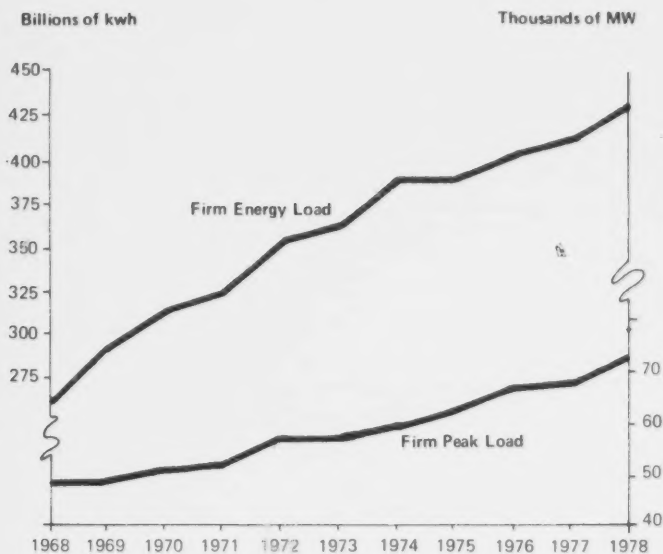
Table 2
HISTORICAL FIRM ENERGY LOAD BY POWER AREA

Year	Total WSCC		Northwest		Rocky Mountain		Arizona New Mexico		So. Calif. Nevada		No. Calif. Nevada	
	Bil. of kwh	Annual Growth Rate (%)	Bil. of kwh	Annual Growth Rate (%)	Bil. of kwh	Annual Growth Rate (%)	Bil. of kwh	Annual Growth Rate (%)	Bil. of kwh	Annual Growth Rate (%)	Bil. of kwh	Annual Growth Rate (%)
1968	269.1	-	114.8	-	12.42	-	17.73	-	70.7	-	53.4	-
1969	289.4	7.5	124.1	8.1	13.10	5.5	20.02	12.9	75.8	7.2	55.7	4.3
1970	312.1	7.8	136.0	9.6	14.30	9.2	22.34	11.6	81.0	6.9	58.4	5.2
1971	325.9	4.4	138.3	1.7	15.79	10.4	24.35	9.0	85.7	5.8	61.9	6.0
1972	353.6	8.5	150.9	9.1	17.21	9.0	27.33	12.2	91.1	6.3	67.1	8.4
1973	365.6	3.4	152.8	1.3	19.41	12.8	30.08	10.1	94.2	3.4	69.1	3.0
1974	383.2	4.8	171.5	12.2	20.73	6.8	31.88	6.0	89.8	-4.7	69.3	0.3
1975	383.2	0.0	167.2	-2.5	21.59	4.1	30.08	-5.6	91.0	1.3	73.4	5.9
1976	408.5	6.6	178.5	6.8	23.33	8.1	33.89	12.7	95.7	5.2	77.0	4.9
1977	410.6	0.5	178.0	-0.3	24.37	4.5	35.64	5.2	96.6	0.9	76.0	-1.3
1978	434.3	5.8	189.7	6.6	25.92	6.4	37.22	4.4	102.2	5.8	79.2	4.2
1968-78	+165.2	4.9	+74.9	5.2	+13.5	7.6	+19.49	7.7	+31.5	3.8	+25.8	4.0

Source: Base data from Western Systems Coordinating Council (WSCC)

period. In considering forecasts of load and peak load for the future, the high but declining rates of growth of the past decade should constitute a working background.

Figure 2
Western Systems Coordinating Council Historical
Firm Energy and Peak Loads 1968-1978



Source: Base data from Western Systems Coordinating Council (WSCC).

B. A Prospective on the Future of Demand for Electricity in the West.

The difficulties and uncertainties involved in projecting future demand for electrical energy and its load peaking characteristics are discussed later. It must suffice at this point to indicate that the number of conditions and behaviors which influence demand for electricity is quite large and the future paths to be followed by these variables can, at present, be seen only vaguely. The variables whose influence on future electricity consumption are particularly important include population growth; industrial activity expansion and alterations in industrial mix; electricity production and utilization technologies; prices of electricity and, underlying them, prices of

primary energy resources, labor and capital used to produce, transmit, and distribute electricity; prices of alternative energy sources; etc. It is impossible at present to predict precisely the futures of these variables in the West and of their spatial distributions by state and substate areas. Relatively rapid population growth and economic expansion in the West appear certain. The rates of growth and expansion and their distribution are much less clear. The course of future electricity price increases is subject to both economic and political forces, neither the nature nor the influence of which can be projected with confidence. Much the same can be said for such alternative energy sources as oil and especially natural gas. The inherently unforeseen nature of major technological change insures a low likelihood of accuracy for any effort to predict the nature and impact of future major innovations.

A great deal of effort has been expended to overcome these difficulties and to design and implement projection methodologies which provide reliable guidance as to the future of the demand side of the electricity market, and of the importance of each controlling variable in influencing that future. As should be expected, a large number of projections have been produced and wide variations exist among them.

The range of growth rates projected in the various studies reviewed is from a high of 8.2 percent per year energy load growth for the State of Utah, as tabulated by the Utah Energy Office, to a declining rate of growth of -0.1 percent per year for the Pacific Northwest Utilities Conference Committee (PNUCC) area (constituting the majority of WSCC's Pacific Northwest Power Pool market). This latter figure is less an actual projection than an analysis by the National Resources Defense Council of possible consumption reductions expected from drastic public measures.

The utilities themselves are a prime source of demand analysis and projection. All private and public electricity producers in the WSCC area generate projections of their own systems' future energy and peak load demands. These are aggregated and tabulated by WSCC and are published yearly. Of all sources examined, the WSCC tabulated figures tended

to be among the highest in terms of growth rates of both measures of electricity consumption. Thus, while the utilities as a group have tended to reduce projections in each succeeding year, at least since 1973, the latest WSCC figures were selected as the upper limit of a reasonable range for both energy and peak loads.

No other geographically exhaustive series which could be compared directly to the WSCC series was discovered. It became necessary to attempt to synthesize a lower limit projection from the projections which were obtained. The procedure used consisted basically of determining the growth rate implications of a number of sub-area, conservation-oriented projections and to apply this growth rate to the same 1980 base figures presented by WSCC. The basic assumption here is that the same conservation behaviors incorporated in the selected sub-areas projections became characteristic throughout the West, and therefore the indicated lower growth rates are achieved.

No claim is made that a carefully considered projection methodology has been developed or especially, that a consistent set of controlling variable projections (population, employment, prices, etc.) underlies the results. Nevertheless, the figures presented do serve as a useful first approximation to such a carefully specified lower limit of a reasonable range of projections.

Table 3

A REASONABLE RANGE OF ENERGY AND PEAK LOAD PROJECTIONS FOR THE WSCC SERVICE AREA

	1980		2000	
	gwh	MW	gwh	MW
High (WSCC Tabulation)	492,441	83,933	1,233,365 ^a	191,201 ^b
Low (See Text)			856,069	143,196

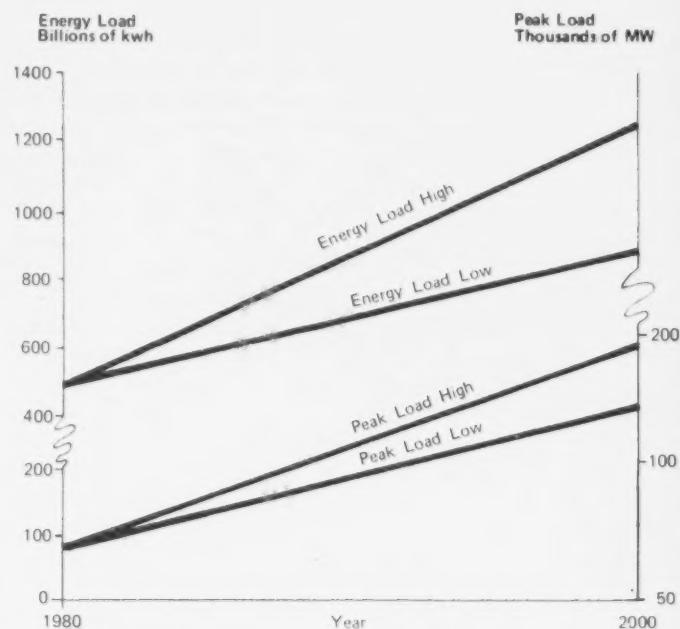
^aThis figure is produced by extrapolating the 1980-1988 WSCC projection to 2000.

^bThis figure is produced by extrapolating the 1980-1998 WSCC projection to 2000.

Table 3 and Figure 3 summarize the implications of the work reviewed in this project regarding the future of energy demand in the Western U.S.

Figure 3

A Reasonable Range of Energy and Peak Load Projections for the WSCC Service Area.



As indicated, both the high (WSCC) and low projections represent significant growth through the rest of this century. From 1980 levels of more than 492,000 gwh and almost 84,000 MW energy and peak loads, respectively, the aggregated producers' projections, as reported by WSCC, indicate expected annual growth at rates of 4.7 and 4.2 percent, respectively. These rates indicate that by the year 2000, total energy production will increase by almost 741,000 gwh per year to over 1,233,000 gwh. Peak load, as seen by the utilities, is expected to increase by more than 107,000 MW to over 191,201 MW. This represents an annual average yearly capacity increase of well over 5,000 MW, or in absolute figures, twice the average annual capacity expansion required by peak load growth during the 1968-1978 period, despite the higher rate of growth in the earlier period.

The lower limit projections are based on a 2.8 percent per year rate of growth in energy load with peak load being projected as a constant proportion (load factor) of energy load. The result is that energy demand is projected to increase by almost 364,000 gwh to just over 856,000 gwh by the year 2000. The peak load implication is for a growth rate of 2.7 percent per year, or an average annual increase of almost 3,000 MW. Thus, even with the marked reduction in *rate* of growth in the lower limit projections, the implication for capacity requirements is that a more rapid accumulation of *capacity* will be needed over the next two decades than was experienced in the 1968-1978 interval.

A great deal of care must be exercised in interpreting these projections. It must be borne in mind that they do represent, basically, a continuation of past behavior patterns; especially pricing practices and the magnitudes of price increases. It is entirely conceivable that primary energy resource scarcity may be translated into electricity price increases of such magnitude that even the demand growth path indicated by the lower limit projection will not be realized. Other policies designed to foster conservation may strengthen such a tendency. Also, policies designed to "smooth out" consumption over time may reduce peak use sufficiently that needed capacity may grow at a significantly lower rate than total energy consumption. In this event, the capacity expansion requirements of the energy load growth projections — upper or lower limit — will be overstated. (The magnitude of this overstatement is limited, however, in that it remains necessary to maintain excess capacity both for scheduled maintenance outages of generating units and to cover accidental forced outages of generation and transmission facilities.)

The width of the range of projected demand for electrical energy presented here emphasizes the high degree of uncertainty involved in preparing such projections. Nevertheless, even the low growth scenario represents major augmentation of current capacity over the next 20 years. A brief summary of the technical-analytical-methodological issues underlying the production of electrical demand projections follows.

II. Electricity Demand Projection — Issues of Method and Analysis

This section deals with some of the technical, methodological and analytical problems of electricity demand projections. An introduction to the principles involved in the development of forecasting methodologies will be presented in Subsection A. This will be followed in Subsection B by a general discussion of the ways in which the problem has been addressed and of the issues involved in evaluating alternative approaches. Subsection C summarizes the mainstream literature on formal projection methodologies and models and sets out the major points of consensus and conflict in this literature. Finally, Subsection D describes what appear to be the major areas for important advances in the state of the art in the near future.

A. Who Makes Projections?

Not surprisingly, the history of electricity demand forecasting begins with the producing utilities themselves. The interest here is the crucial bread-and-butter concern with correctly anticipating sales in order to be able to provide a production-transmission-distribution system which is adequate to meet customers' purchase requirements without creating costly excess capacity. As the cost of capacity expansion increased and lead times required to bring new generating units on line lengthened, the utilities recognized the need to coordinate their efforts, improve the reliability of methodologies used, and to widen the range of questions which could be addressed. As a result, demand forecasting functions, especially regarding development of new approaches and refinement of existing techniques, have been assigned to such voluntary industry organizations as the Edison Electric Institute (EEI) and the Edison Power Research Institute (EPRI). Also, a collection-coordination-dissemination role has been assumed by the National Electric Reliability Council and the nine regional councils. The interest of the utilities in advancing the state of the art, especially at the level of EPRI and EEI, is strong. However, the requirement that the methods adopted by the utilities support resource commitment planning insures a healthy

skepticism regarding new, and as yet untried and unproven, approaches. The utilities are, quite appropriately, somewhat conservative in placing exclusive confidence in new projection techniques from whatever source and, therefore, maintain a significant role for the judgment and local expertise aspects of what is described in Subsection B as the traditional approach.

Academic interest in analyzing and, especially, projecting electricity demand is of relatively recent vintage, with the first studies dating from the early 1960's. The interest of academicians in the phenomenon of electricity demand is only partially practical, and much of their work has not been directly useful to utilities. Significant advances have been made by the academic community, however, in understanding the conditions and influences which operate to determine the level and timing of demand for electricity. As these findings are incorporated into the public sector in the development of new policies toward both the consumers and producers of electricity, their practical influence on both energy and peak loads should become highly significant.

Federal and state governmental agencies are also, to varying degrees, actively involved in demand forecasting. The posture of the projection teams in these agencies depends on the agencies' particular missions. These vary from simply providing an independent forecast which can be responded to in general policy formulation to a particular mandate for investigating ways to curtail growth in consumption. The questions asked and the methods used to answer them are both strongly influenced by these considerations and, therefore, the nature of the projection techniques adopted and the projections generated must be interpreted, in part, from the point of view of agency mandate.

As a final note, it must be emphasized that there exists a high degree of interrelationship among the groups involved in demand projections. Both utilities and government agencies utilize academic expertise. The role of utilities' academic research efforts is as often that of active participant-contributor as that of passive object-of-examination/provider of data.

Finally, a substantial amount of what may be thought of as high quality academic research is carried out by research agencies in the utility companies themselves and in state and federal agencies.

B. How Are Electricity Demand Projections Produced?

Methods of demand forecasting are as varied as the purposes to which the forecasts can be put and the different levels and types of training of the people or groups producing them. The traditional approach of the utilities is to combine relatively simple but well tested econometric techniques with extrapolation of recent growth experience and, of special importance, to temper these calculational techniques with the judgments of company personnel as to the prospects for increase in the numbers of customers and in the consumption levels of existing customers in small subareas of the company's total market. At the other extreme, the econometric approach has been applied to produce large-scale, extremely complex and elaborate sets of equations attempting to incorporate in explicitly quantifiable and mechanical fashion, as many as possible of the factors thought to influence consumption, with little if any role for individual judgment in the actual production of projections. (Judgment is, of course, crucial in specifying the set of equations and in estimating the values of the parameters involved.) Between these extremes and among representatives of each, a very wide variety of individual methodologies has been developed.

All of these techniques, however, incorporate three basic components. They all are based upon a *model* of behavior which produces a projection based upon *data* and *assumptions*. Here, the term "model" is used to indicate the set of relationships which are thought to explain or control how the future course of electrical demand may develop. These relationships may be stated explicitly as a formal system of mathematical equations or they may remain implicit or notional in the form of a set of beliefs and expectations in the mind of an individual forecaster. For example, the judgment of a utility's local service representative is produced by such an informal, notional model. The models considered here are

usually set out formally, but they always reflect the notional model of their creators.

Any model, formal or notional, requires information about the relative quantitative magnitudes of its interrelated components in order to generate specific projections. In this report, the term "data" will be used to denote information regarding completed historical behavior. The term "assumption" will usually be used to indicate expectations about future developments regarding phenomena which, according to the model, control load or peak load growth.

A simple example may indicate these distinctions. A model may be of the form:

$$\text{LOAD} = (\text{LOAD PER CAPITA}) \times (\text{POPULATION}),$$

This is a model because it expresses a relationship between overall behavior of the system, as measured by POPULATION (an independent variable), and LOAD (the dependent variable). Of course, more elaborate models would include more independent variables than just population and more complicated mathematical relationships. In this example, data would consist of a number of pairs of realized populations and loads. These would be used to calculate the historical LOAD PER CAPITA figure and, perhaps, trend indicated future values. Future values of the independent variable (POPULATION) enter the model as assumptions and the model can be used to project the impact of alternative assumptions reflecting different population growth (or decline) scenarios. The projection year values of LOAD PER CAPITA are also assumptions, whether they reflect a constancy assumption, projected trend change, or values produced through some other analytical or intuitive procedure. The result of the model operating on the data and based on assumptions is the forecast or projection into the future of load growth or decline. All models discussed in this report, however elaborate and challenging, and whether formal or informal, are of this type.

In reviewing alternative forecasting methodologies an ends/means framework has been adopted.

Work of this sort, like all other, requires the expenditure of human and material resources and time. Increases in resources devoted to the modeling-forecasting effort can reasonably be expected to increase forecast reliability and, especially, to increase understanding of the causes of change in electricity uses. In many cases, however, less expensive procedures may produce results which are adequate for the purpose at hand. In such cases, adoption of more costly alternatives would produce a degree of refinement, the value of which would be exceeded by its cost. Thus, use of the "better" methodology would not be justified by the contribution to improved planning and decision making expected from it. In the literature, the word "sophisticated" is used to indicate that high degrees of detailed formal analytical and statistical techniques are used in a given methodology. This word seems also to bear the connotation "better." To avoid the implication that sophisticated techniques are to be preferred in all cases, the word "elaborate" has been adopted to indicate the detail and formality of the techniques used.

The following issues have been used to guide consideration of the various projection methodologies:

(1) *Projected future levels of activity in the service area and the role of such projections in the model.* Demand for energy of all sorts in any area depends upon the number of people living in the area, their groupings into individual households, and their selections of housing types; and upon the amount of economic activity in the area and its distribution across industrial sectors.

(2) *Price and income effects on demand for electricity.* Assuming given levels and compositions of population and economic activity, it is reasonable to expect that demand for energy in any utility's service area will increase with increases in area income and with decreases in energy prices relative to prices of other commodities. Further, demand for electricity can be expected to vary directly with prices charged for alternative energy sources. Thus, the treatments accorded income, price of electricity, and prices of

other types of energy in projecting demand for electric power in any projection methodology must be evaluated.

(3) *Effects of regulatory and other governmental actions on level, and especially geographic distribution, of demand.* Effects on level of demand for energy of all sorts could result from possible federal policies to promote energy conservation. Such policies could also affect the demand for electricity specifically as a result, for example, of efforts to shift from electricity to alternate energy sources for space heating purposes. Other influences on demand for new coal-fired power plants could be expected from governmental efforts to induce shifts away from oil and gas as a steam fuel.

(4) *Electricity utilization technology.* Future improvements in the efficiency of the technology through which electrical energy is put to use can be expected. For any overall level of activity, these improvements will result in lower demand for electricity. Thus, the treatment of consumption technology is an important component in evaluating any projection methodology.

C. Formal Model Formulations

Attention at this subsection is limited to formal models, i.e., to those consisting of an explicit set of equations calibrated with a specific set of data and producing projections conditioned by a particular set of assumptions. The diversity of the models reviewed prohibits even a cursory discussion of each. Rather, a general discussion of the literature in terms of the four issues listed above will be attempted.

All of the projection models examined incorporate some measure of projection area activity as an independent variable. Further, they all disaggregate these variables into types of activity, usually along traditional customer class lines: residential, commercial, and industrial classes. The more elaborate models provide further disaggregation by adding additional categories such as street lighting, agriculture, etc., and/or by breaking the major classes down by type of housing unit, urban vs. rural location, etc.

A great deal of research has been done in an attempt to quantify the relationship between electricity prices and quantities of electrical energy consumed. The findings of this research have been incorporated into nearly all the more elaborate models. A major exception is the residential sector demand model of the California Energy Resources Conservation and Development Commission. Many of the simpler formal models, such as that of the Nevada Department of Energy, do not include an explicit price variable, but do make assumptions about future per capita consumption.

The effects of both income and prices of alternative energy sources (usually natural gas) on electricity consumption have also been extensively investigated. Again, typically, the implication of this research has been incorporated into the more elaborate models.

Analysis of the influence of government regulation on consumption has followed two paths. The first is related to the price variable. Electricity prices are set by public agencies, and thus reflect public policy. The price variable itself is, therefore, partially a public policy variable. A more interesting relationship between public policy and price is the price structure itself. At the present time, study is underway on the potential impact of a shift from the traditional declining block rate pricing mechanism to alternative rate structures such as flat rates, "lifeline" structures, time-of-day systems, etc., on consumption and especially on peak load. Results of these investigations have not as yet been included in formal demand projection models.

The second relationship between public policy and electricity consumption has been the effort to include the impacts of compulsory energy conservation policies. Some models have attempted such an incorporation, but much work remains to be done before the efforts can be thought of as satisfactory.

The technology of electricity utilization as it affects consumption has also been the subject of extensive research and analysis. In the class of models called end use models, the stock of electricity-using appliances is projected explicitly, usually with some

degree of disaggregation by appliance type. Use coefficients are applied to these appliance stock projections in order to generate total consumption figures. The crucial role of utilization technology changes is built into the analysis and projection of these coefficients. This has been a particularly useful avenue for analysis of the impacts of proposed major appliance redesign proposals in response to either market signals or governmentally imposed efficiency standards.

The class of models which does not explicitly project the stock of appliances is called commodity models. In this class, explicit treatment of consumption efficiency increases is difficult. Nevertheless, indirect incorporation of these effects is frequently made in development of assumptions about future consumption per customer, however that phenomenon may be formulated in a specific model.

From the modeling literature review, a set of core independent or controlling variables common to most of the models considered has been identified, as expected. These consist of (1) a more or less complex set of projections of economic and population activity in the projection area, (2) an electricity price variable, (3) a variable reflecting the price of alternative energy sources, and (4) some measure of area income. In addition to this set of core variables,

different analysts have found significant relationships between electricity consumption and each of the following variables:

- climate
- mineral production
- average household size
- percent of population in rural subareas
- residence size
- population density
- percent of dwelling units which are single family units
- number of housing units per capita
- labor cost indices

Table 4 summarizes current thinking about the strength and nature of the relationships among the core variables.

In Table 4, the term elasticity is used in its formal economic sense to indicate the strength of a given relationship. Elasticity is defined as the percent change in the dependent variable (electricity consumption) divided by the percentage change in the independent variable (price of electricity, price of other energy sources, income). For convenience, elasticity values are broken into ranges of (1) relative elasticity (elasticity greater than one in absolute value), where a given percentage change in the independent variable produces a greater percentage change in the dependent variable; and (2) relative

Table 4
RELATIONSHIPS BETWEEN CORE VARIABLES AND ELECTRICITY CONSUMPTION

Core Variable	Short Run	Long Run
Price of Electricity	Relatively inelastic, frequently less than .25 in absolute value. Industrial use more elastic than residential.	Relatively elastic ranging up to 2.0 in absolute value.
Price of Other Energy Sources	Quite inelastic. Industrial use more elastic than residential.	Relatively inelastic, but greater than in short run. Typical values approach .5 in absolute value.
Income	Relative inelastic but significant.	Relatively elastic in most studies, but some range as low as .29.

inelasticity (elasticity less than one in absolute value), where the percentage change in the dependent variable is less than the associated percent change in the independent variable. Thus, a relatively elastic relationship indicates a more rapid response than does a relatively inelastic one. Relative inelasticity does imply a significant relationship, however, with that significant declining as elasticity approaches zero.

The importance of the findings summarized in Table 4 is that despite the fact that rising population, economic activity, and incomes exert strong upward pressures on any area's consumption of electricity, the effects of price increases reflecting increasing relative scarcity of energy resources can be expected to mitigate these increases as a result of individual consumers' responses to market stimuli. These effects along with the effects of public energy conservation policies are the bases for the low growth scenarios used to synthesize the lower limit projections presented in Section I.

D. Conclusions and Prospects for Future Developments

From this review of electricity demand projections and projection methodologies it seems clear that the mainstream literature has established reasonably well the basic behavioral relationships which have controlled electricity consumption in the past, and has provided reasonable projections of future energy and peak load demands if the future electricity production-consumption system remains basically the same as it is today.

Interesting advances are presently being made which will provide technology to simulate with projection models the impact on consumption of major changes in the structure of electricity markets. Primary among these is the investigation of the impacts on both energy loads and peak loads of innovative pricing structures. At the present time, virtually all electrical energy in the U.S. is delivered under the declining block rate price structure in which users of larger amounts of power are charged a lower rate per kwh than users of smaller amounts. A variety of alternative schemes is being considered. These include inverted or increasing block rates, flat rates, and lifeline rates, each of which could affect energy load, possibly very significantly.

The most interesting alternative pricing proposals fall into the general class of marginal cost pricing schemes. Such structures attempt to set individual customers' bills equal to the costs incurred in producing the power they actually use. Under such a structure, consumption of a given amount of electricity during periods of peak demand, which normally require generation of electricity with the most costly marginal generating units, would be more expensive than consumption of the same amount of electricity at other than peak periods. Peak-load or time-of-day rate structures are variants of marginal cost schemes. To the extent that users have different degrees of responsiveness to the price of electricity, those users whose demand for electricity exhibits more responsiveness may change their temporal pattern of consumption in order to minimize their total outlays. Such changes will reduce daily or seasonal peak demand, with the end result that the system as a whole would not need as much total generating capacity, even if it continues to produce and consume the same total electrical energy.

The effects on electricity consumption of public policies designed to promote electricity conservation are also being investigated. Such policies fall into three categories:

(1) *Financial incentives* which are voluntary in the sense that they call for individual consumers to reduce consumption in response to either higher prices or higher net appliance purchase costs, or in response to tax incentives designed to foster improved insulation, implementation of alternative energy forms (such as solar heating systems), etc.

(2) *Other voluntary measures* such as public education and motivation programs.

(3) *Mandatory conservation measures* such as increasing insulation requirements in building codes, requiring lower thermostat settings, or limiting times for commercial display lighting.

The potential of such public policies are, as yet, only imprecisely understood. However, as this understanding is improved, it can be incorporated into demand projection models to simulate the policies' potential impacts on electricity consumption.

Utah Business Statistics

Statewide Statistical Data	% Chg.				12 Mo. Average Ending		
	Nov. 1979	Oct. 1979	Nov. 1978	From Year Ago	Nov. 1979	Nov. 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.)*	na	51,615	48,019	na	na	33,900	na
Livestock and Livestock Products (thous. of dol.)	na	39,482	33,572	na	na	25,800	na
Crops (thous. of dol.)	na	12,133	14,447	na	na	8,149	na
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	69.2	68.0	55.5	24.3	69.0	49.7	38.8
Lambs (cwt)	63.7	65.5	59.6	6.9	62.8	58.8	6.8
Turkeys (per lb.)	.510	.460	.520	-1.9	0.5	.450	11.1
Milk, Wholesale (cwt)	12.5	12.2	11.1	12.6	11.6	10.1	14.9
Alfalfa Hay, Baled (per ton)	57.0	53.5	46.5	22.6	52.0	50.1	3.8
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	16,195	18,037	19,297	-16.1	15,914.5	19,666	-19.1
Calves (thous. of lbs.)	7	8	24	242.8	na	20	na
Sheep and Lambs (thous. of lbs.)	233	309	230	1.3	217.7	223	-2.4
Hogs and Pigs (thous. of lbs.)	2,856	2,987	2,203	29.6	2,361.9	1,886	25.2
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,183	3,157	2,908	9.5	3,040.5	2,780	9.4
Investments, Total, Utah Member Banks (mil. of dol.) ^a	831	829	816	1.8	831.3	769	8.1
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,916	3,909	3,670	6.7	3,796.3	3,493	8.7
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	62	55	52	19.2	55.6	53.5	3.9
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,258	1,289	1,165	8.0	1,169.4	1,132	3.3
Time Deposits, Total, Utah (mil. of dol.) ^a	2,597	2,565	2,453	5.9	2,572.4	2,310	11.4
Savings, Savings and Loan Association (mil. of dol.) ^b	1,672.2	1,670.6	1,475.6	13.3	1,600.0	1,473.2	8.6
Sale of U.S. Savings Bonds-Series E & H (thous. of dol.)	2,148.0	5,177.0	2,413.6	-11.0	2,485.7	2,397.3	3.7
New Corporations (no.)	371	442	384	-3.4	408.2	396	3.1
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	127,745.6	41,625.8	120,603.2	5.9	70,770.8	61,937.2	14.3
Sales & Use Tax	82,055.4	15,107.6	82,657.3	-0.7	30,344.7	38,951.2	-22.1
Motor Fuel Tax	6,075.8	8,086.2	3,262.9	86.2	5,616.8	4,475.6	25.5
Individual Income Tax	35,033.3	10,970.2	30,239.7	15.9	23,991.6	19,848.7	20.9
Corporation Franchise Tax	621.5	3,571.7	1,049.2	-40.8	3,064.2	2,848.2	7.6
Employment							
Civilian Labor Force (thous.) ^c	632.7	632.3	601.5	5.2	615.8	583.4	5.6
Total Employed Persons	606.3	609.6	575.0	5.4	590.5	556.5	6.1
Unemployed	26.4	23.0	26.5	-0.4	28.4	26.7	6.4
Percent Total Labor Force	4.2	3.6	4.4	-4.5	4.6	4.6	0.0
Employees on Nonagricultural Payrolls (thous. of jobs)	576.2	574.6	544.6	5.8	554.1	521.3	6.3
Manufacturing	88.8	87.8	84.9	4.6	84.8	79.3	6.9
Mining	18.2	18.0	17.1	6.4	17.5	15.7	11.5
Contract Construction	37.6	39.4	35.5	5.9	37.0	34.7	6.6
Transportation, Communication and Utilities	35.1	35.0	32.8	7.0	34.0	31.4	8.3
Wholesale Trade	35.4	35.5	31.8	11.3	34.5	31.1	10.9
Retail Trade	104.1	101.5	99.9	4.2	99.8	87.6	13.9
Finance, Insurance and Real Estate	26.3	26.3	25.0	5.2	25.7	24.3	5.8
Services ^d	103.3	104.3	93.4	10.6	99.0	90.3	9.6
Federal Government	35.6	36.1	35.9	-0.8	37.0	37.0	0.0
State Government ^e	34.4	33.7	34.3	.3	32.0	31.6	1.3
Local Government ^e	57.3	56.9	53.9	6.3	54.8	51.1	7.2
Average Weekly Hours:							
Manufacturing	39.8	38.4	40.7	-2.2	39.0	39.6	-1.5
Mining	41.3	40.9	42.2	-2.1	41.7	42.7	-2.3
Contract Construction	38.7	38.6	36.6	5.7	37.5	39.6	-5.3
Wholesale Trade	37.5	37.1	36.6	2.5	37.5	36.7	2.2
Retail Trade	27.6	28.2	27.7	-0.4	28.1	28.7	-2.1
Amount of Unemployment Comp. (thous. of dol.)	2,800.6	2,702.5	2,919.6	-4.1	3,873.4	3,197.7	21.1
Construction							
Total Construction (thous. of dol.)	109,962	146,874	79,107	39.0	122,546.7	106,595	15.0
Residential	45,789	56,727	52,496	-12.8	60,669.2	59,138	2.6
Nonresidential	33,676	86,016	22,737	48.1	46,854.3	37,262	25.7
Public Works and Utilities	30,457	4,131	3,874	696.2	15,021.0	10,319	45.6
Total Permit Construction (thous. of dol.) ^f	90,968.8	137,295.1	98,301.8	-7.5	103,392.0	96,833.9	6.8
Residential	31,981.6	49,370.9	51,951.0	-38.4	54,605.5	62,995.3	-13.3
Nonresidential	46,693.1	77,087.6	39,737.0	17.5	41,215	28,960.7	42.3
Additions, Alterations and Repairs	9,294.1	10,836.6	6,612.9	40.5	7,066.6	5,954.8	18.7
New Dwelling Units (no.)	773	1,336	1,473	-47.5	1,435.1	1,847	-22.3
Tourism/Travel							
Air Passengers (total no. on and off)	348,670	355,455	315,268	10.6	384,650	348,491	10.4
Highway Traffic Count Across State Lines	33,845	38,847	33,156	2.1	38,265	41,586	-8.0
Transient Room Taxes (thous. of dol.)	486.2	151.2	563.1	-13.7	183.0	156.5	16.9
Visits, State, Nat'l. Parks, Monuments (thous.)	283.7	732.7	334.1	-15.1	1,014.5	1,151.7	-11.9
General							
New Cars and Truck Sales							
C.P.I. (National Index - 1967=100)	227.5	225.4	202.0	12.6	214.9	194.0	10.8
Telephones in Service, (Business)	75,413	75,163	71,272	5.8	73,453	69,721	5.4
Telephones in Service, (Residential)	406,057	404,326	389,187	4.3	394,517	375,776	5.1
Electric Customers (Commercial)	32,282	32,105	30,991	4.2	31,667	30,008	5.5
Electric Customers (Residential)	344,669	343,638	331,887	3.9	339,554	323,650	4.9
Natural Gas Customers (Residential & Commercial)	364,335	357,285	348,601	4.5	358,852	340,675	5.3
Natural Gas Customers (Industrial)	635	635	670	-5.9	656	670	-2.1
Production							
Net Electric Power Utilized (mil. of kwh)	1,010.0	957.7	1,006	0.4	904.2	909.8	-0.6
Crude Oil to Refineries (thous. of bbls.)	4,994.1	4,864.1	5,496.4	-9.1	4,915.8	5,190.1	-5.3
(Oct. 79) (Sept. 79) (Oct. 78)					(Oct. 79) (Oct. 78)		
Crude Oil Production (thous. of bbls.)	2,158.2	2,280.3	3,058	-29.4	2,579.8	2,841.2	-9.2
Natural Gas Production (mil. of cu. ft.)	7,002.8	6,817.6	7,210	-2.9	6,191.9	6,581.7	-5.9
Coal (thous. short tons)	954	1,101	942	1.3	996.4	867	14.9
Copper (thous. metric tons) ^g	15,169	16,814	17,156	-11.6	15,446.4	15,714	-1.7

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA				% Chg.	12 Mo. Average Ending		
	Nov. 1979	Oct. 1979	Nov. 1978	From Year Ago	Nov. 1979	Nov. 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)*	409.5	406.2	387.2	5.8	395.3	371.5	6.4
Auth. Permit Construction (mil. of dol.)	67.3	83.8	64.5	4.3	66.5	62.2	6.9
New Dwelling Units	444	812	954	-53.5	892	1,183	-24.6
Postal Receipts (thous.)†	8,306	4,494	4,050.1	105.1	4,802.7	4,022.3	19.4
Electric Customers (Residential)	263,970	267,364	254,853	3.6	260,675	249,036	4.7
Electric Customers (Commercial)	21,066	20,934	19,577	7.6	20,699	19,447	6.4
Natural Gas Customers (Residential)	270,420	265,524	258,591	4.6	266,741	252,824	5.5
Natural Gas Customers (Industrial)	468	466	494	-5.3	467	484	-3.6
Department Store Sales (mil. of dol.)	34,137	25,916	31,317	9.0	26,202	25,169	4.1
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele) (thous.)*	312.6	97.1	294.7	6.1	292.1	275.4	6.1
Auth. Permit Construction (mil. of dol.)*	30.2	34.6	5.6	439.3	15.6	7.7	102.6
New Dwelling Units	20	13	26	-23.1	48.5	73	-33.6
Postal Receipts (thous.)†	6,711	3,723	3,340.5	100.9	3,909.5	3,056.4	27.9
Natural Gas Customers (Residential)	56,755	55,572	56,602	0.3	56,784	55,978	1.4
Natural Gas Customers (Industrial)	168	168	186	-9.7	174	181	-4.1
Telephones in Service. (Business)h	41,719	41,619	39,505	5.6	40,751	38,821	5.0
Telephones in Service. (Residential)h	207,590	206,677	198,544	4.6	202,840	193,131	5.0
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis) (thous.)*	96.9	309.1	92.5	4.8	95.0	91.6	3.7
Auth. Permit Construction (mil. of dol.)*	2.7	5.9	1.8	50.0	6.9	3.0	130.0
New Dwelling Units	40	118	32	25.0	49	36	35.3
Postal Receipts†	671.5	334.2	311.1	115.8	379.5	283.1	34.1
Natural Gas Customers (Residential)	21,273	20,892	21,032	1.1	21,232	21,043	0.9
Natural Gas Customers (Industrial)	63	63	64	-1.6	62	68	-9.0
Telephones in Service. (Business)l	6,980	6,950	6,628	5.3	6,790	6,458	5.1
Telephones in Service. (Residential)l	42,334	42,238	41,292	2.5	41,666	40,322	3.3
Mountainlands (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)*	73.8	73.2	69.2	6.6	70.4	65.7	7.2
Auth. Permit Construction (mil. of dol.)*	8.5	19.3	21.4	-60.3	18.2	17.7	2.8
New Dwelling Units	112	278	292	-61.6	282	359	-21.4
Postal Receipts (thous.)†	1,135	571	492.2	130.6	641.0	484.1	32.4
Electric Customers (Residential)	32,153	31,935	30,465	5.5	31,269	29,461	6.1
Electric Customers (Commercial)	2,997	2,964	2,798	7.1	2,907	2,709	7.3
Natural Gas Customers (Residential)	56,780	55,489	53,963	5.2	55,772	52,044	7.2
Natural Gas Customers (Industrial)	94	96	99	-5.1	95	98	-3.5
Provo							
Non-Ag. Employment (thous.) (Utah Co.)*	68.5	67.8	64.2	6.7	64.7	60.5	6.9
Auth. Permit Construction (mil. of dol.)*	2.1	4.6	7.4	-71.6	4.4	3.6	22.2
New Dwelling Units	27	101	87	-69.0	69	73	-5.5
Postal Receipts (thous.)†	652.5	319.1	283.2	130.4	354.5	255.9	38.5
Natural Gas Customers (Residential)	14,873	14,568	14,206	4.7	14,682	14,032	4.6
Natural Gas Customers (Industrial)	44	43	48	-8.3	45.7	47	-2.8
Telephones in Service. (Business)l	6,266	6,253	5,975	4.9	6,094	5,953	2.4
Telephones in Service. (Residential)l	39,268	39,149	37,690	4.2	36,807	34,892	5.5
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non-Ag. Employment (thous.)*	13.2	13.4	12.6	4.8	13.1	12.1	8.3
Auth. Permit Construction (mil. of dol.)*	2.1	1.6	1.6	31.3	2.2	2.2	0.0
New Dwelling Units	28	23	30	-6.7	41	43	-5.1
Postal Receipts (thous.)†	112.5	64.9	63.7	76.6	75.0	63.5	18.1
Electric Customers (Residential)	8,825	8,799	8,504	3.8	8,677	8,310	4.4
Electric Customers (Commercial)	1,925	1,895	1,915	0.5	1,904	1,886	0.9
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)*	11.2	11.5	10.6	5.7	11.4	10.4	9.6
Auth. Permit Construction (mil. of dol.)*	.91	1.0	1.3	-30.0	3.1	2.2	40.9
New Dwelling Units	14	17	26	-46.2	30	32	-6.3
Postal Receipts (thous.)†	94.1	45.3	41.8	125.1	52.5	42.1	24.7
Electric Customers (Residential)	4,796	4,789	4,504	6.5	4,682	4,370	7.1
Electric Customers (Commercial)	761	753	737	3.3	749	724	3.5
Natural Gas Customers (Residential)	4,729	4,624	4,591	3.0	4,678	4,580	2.1
Natural Gas Customers (Industrial)	7	7	9	-22.2	8	9	-13.3
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)*	32.1	32.0	30.7	4.6	30.5	29.1	4.8
Auth. Permit Construction (mil. of dol.)*	6.5	3.4	3.5	85.7	4.0	5.4	-25.9
New Dwelling Units	95	81	51	86.3	69	83	-17.2
Postal Receipts (thous.)†	379.6	194.5	186.1	104.0	221.0	182.5	21.1
Electric Customers (Residential)	13,926	13,900	13,432	3.7	13,700.2	13,178	4.0
Electric Customers (Commercial)	1,715	1,709	1,671	2.6	1,691	1,638	3.2
Natural Gas Customers (Residential)	23,585	23,082	22,879	3.1	23,304	22,520	3.5
Natural Gas Customers (Industrial)	51	51	48	6.3	48	48	0.6
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)*	20.2	20.6	19.1	5.8	19.6	17.7	10.7
Auth. Permit Construction (mil. of dol.)*	1.7	5.2	2.3	-26.1	2.6	2.6	0.0
New Dwelling Units	30	61	36	-16.7	32.5	44	-26.1
Postal Receipts (thous.)†	na	na	60.8	na	na	na	na
Electric Customers (Residential)	10,677	10,585	10,234	4.3	10,476	9,915	5.7
Electric Customers (Commercial)	1,402	1,400	1,369	2.4	1,389	1,324	4.9
Natural Gas Customers (Residential)	8,821	8,566	8,450	4.4	8,590	8,331	3.1
Natural Gas Customers (Industrial)	15	15	11	36.4	12	12	2.5
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)*	16.0	16.3	15.2	5.3	16.1	15.1	6.6
Auth. Permit Construction (mil. of dol.)*	3.9	2.3	3.6	8.3	5.0	4.7	6.4
New Dwelling Units	50	64	78	-35.9	89	107	-17.1
Postal Receipts (thous.)†	178.8	92.1	84.2	112.4	106.0	72.3	46.6
Electric Customers (Residential)	10,322	10,266	9,895	4.3	10,077	9,511	5.9
Electric Customers (Commercial)	2,416	2,450	2,354	2.6	2,374	2,175	9.2

Finally, various load management policies, i.e., policies designed to induce customers to shift their use of electricity to off peak hours, are being examined as to potential peak load reducing effects. One such policy is to shift to some form of peak load or time-of-day pricing structure. Other options include the encouragement of end use storage systems such as for space heating or water heating, and the implementation of either timed or utility controlled switches on heavy use appliances, such as water heaters. Such switches would turn these appliances off at designated peak hours.

While the exact nature and magnitudes of the relationship currently being analyzed are not yet fully understood, the effort being expended on them can be expected to prove fruitful over the next several years. As this comes about, electricity demand forecasting models will be able to generate more reliable projections. Perhaps more importantly, they will also become better able to simulate the impact of various economic and public policy changes. In this case, perhaps the most useful roles for such models in the future may be as providers of information crucial to the design of policies and procedures for dealing with energy problems in the last two decades of the twentieth century.

BUSINESS STATISTICS Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices:
U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
Savings, Savings and Loan Association: Utah savings and loan institutions
U.S. Savings Bonds: U.S. Treasury Department
New Corporations: Utah Secretary of State
Tax Collections: Utah State Tax Commission
Employment data: Utah Department of Employment Security
Construction: Dodge Construction Statistics and BEBR
Air Passengers: Salt Lake International Airport, statistics service
Traffic Count: Utah Department of Transportation, Travel Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile Dealers Registrations Service Company
Telephone, electric, natural gas customers: cooperating Utah utility companies
Net Electric Power Utilized: cooperating Utah power companies
Crude Oil to Refineries: cooperating Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^a End of Period, includes member banks of Federal Reserve System
- ^b As of the close of business on last day of the month
- ^c Current year—preliminary data; previous year—final figures.
- ^d Includes nonprofit and religious
- ^e Includes public schools and colleges
- ^f Total new construction plus additions, alterations and repairs
- ^g Beginning January 1979, data reported in metric tons; to convert metric tons to short tons, multiply by 1.10231
- ^h Includes Salt Lake County and Bountiful
- ⁱ Includes Weber and Morgan Counties
- ^j Includes Orem and Springville
- ^r revised
- ^x increase from zero or decrease to zero
- ^{na} not available

UTAH ECONOMIC AND BUSINESS REVIEW

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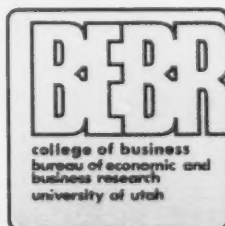
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The Economics of Coal-Fired Steam Power Plant Generating Unit and Station Sizes

by Boyd L. Fjeldsted, Senior Research Economist

This article is the third of a series reporting on the findings of a study by the Bureau of Economic and Business Research on Power Plant Siting in the Great Basin Area of Utah. The study was done as part of a three-university consortium project funded by the United States Department of Energy under Contract No. DE/ASO 3-77 SFO-1484. Participating universities were the University of Utah, Utah State University and Brigham Young University.

Introduction

For some time now a controversy has been going on regarding what constitutes a socially optimal size configuration for coal-fired steam power plants. The purpose of this article is to attempt to shed some light on the principal issues involved in this controversy and to summarize the positions of several of the leading protagonists. This introductory section includes a brief overview of the relationship between power plant size and economic efficiency. The next section first discusses economies accruing to size of generating unit, and then discusses economies accruing to the number of generating units in a power plant. The following section covers the issue of equipment reliability and availability in relation to generating unit size, while the last section summarizes the findings of three energy facility siting studies dealing with the issue of optimal size configurations of coal-fired steam power plants.

Generally speaking, larger power plants have a demonstrated superiority over smaller power plants in terms of most measures of economic efficiency. Larger plants have intrinsically better thermal efficiency, because heat losses tend to fall in relation to total steam flow, and because larger power plants allow the adoption of higher steam temperatures and pressures. Consequently, fuel input and cooling water requirements per unit of output are smaller for larger plants than smaller plants. Additionally, capital costs per unit of capacity are significantly smaller for larger plants than for smaller plants. Moreover, physical size does not increase proportionally to output capacity so that the amount of land used per unit of capacity is smaller for larger plants than for smaller plants. Finally, unit costs of operation and maintenance are much smaller for larger plants than for smaller plants.

Offsetting these scale economy advantages of larger plants, however, is the tendency for these plants to be down

a greater proportion of the time due to forced outages and routine maintenance requirements. Thus, the operation and maintenance cost advantage of larger plants tends to be offset by their lower availability for duty and the additional generating reserves necessitated by their higher forced outage rates.

Sources of Power Plant Scale Economies

There are two aspects of the problem of selection of optimal power plant size configuration. The first has to do with the selection of the optimal boiler-turbine-generator unit size, and the second with selection of the optimal number of units to be located at one site or station. In 1930 the largest steam electric generating unit in the United States was about 200 megawatts and the average size unit at that time was about 20 megawatts. By 1955 the largest unit size had increased to about 300 megawatts and the average size had increased to 35 megawatts. In 1968 the largest unit in operation was 1,000 megawatts and the average size for all units had increased to 66 megawatts. By 1970, units of 1,300 megawatts were being installed and the average size

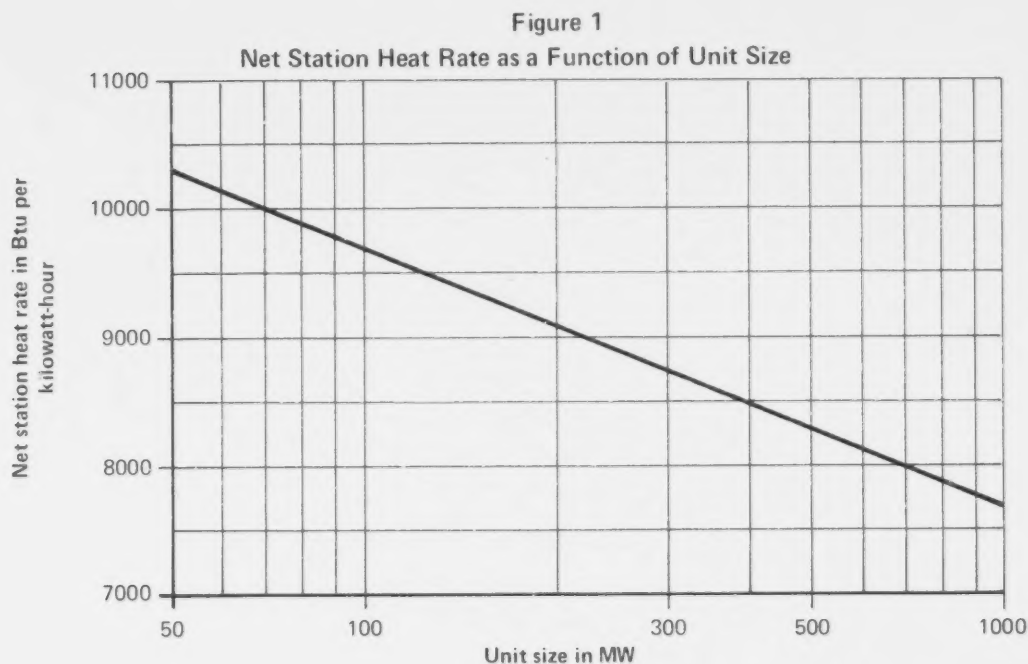
for all units under construction was about 450 megawatts.¹

The latest *Electrical World* Fossil Boiler Survey shows 209 units scheduled for commercial service in 1980 and subsequent years, with an average size of 528 megawatts. The largest of these are three 1,300 megawatt units scheduled to go on line in 1980, 1983 and 1984. There appears to be only a slight upward trend in average size of unit scheduled to go into service between 1980 and 1990.²

Historically, the reason for the trend to larger units is explicable mainly in terms of economies of scale. Both capital costs per megawatt of installed capacity and operating and maintenance costs per unit of energy generated are less for larger units than for smaller units. The thermal efficiency of larger units is significantly greater than for smaller units. For example, Figure 1 shows that the theoretically attainable heat rate (Btu input per kwh output) for a 900-megawatt unit is only about 85 percent of that

¹ Federal Power Commission, *1970 National Power Survey* (Washington: U.S. Government Printing Office, December 1971), Part I, p. 1-5-2.

² *Electrical World*, December 15, 1979, pp. 36-41.



Source: Suilin Ling, *Economies of Scale in the Steam-Electric Power Generating Industry*, (Amsterdam: North Holland Publishing Company) 1964, p. 27.

for a 200-megawatt unit. Practically attainable heat rates (given air pollution control equipment power requirements) are somewhat higher than indicated by the curve shown in Figure 1, but the inverse relationship between heat rate and unit size is demonstrated by the operating experience of power plants in *Electrical World's* most recent Steam Station Cost Survey. (See Table 1.)

It has been estimated that the capital cost per unit of installed capacity for a two 900-megawatt unit plant is between 75 and 80 percent of that for a two 200-megawatt unit (see Figure 2). Overall operating and maintenance costs (excluding fuel costs) per unit of output for an 1,800-megawatt plant consisting of two 900-megawatt units are only about 70 percent of that for a 400-megawatt plant consisting of two 200-megawatt units (see Table 2). Overall combined costs per unit of output for the 1,800-megawatt plant have been estimated to be only about 75 percent of that for the 400-megawatt plant (Figure 3).

Table 1

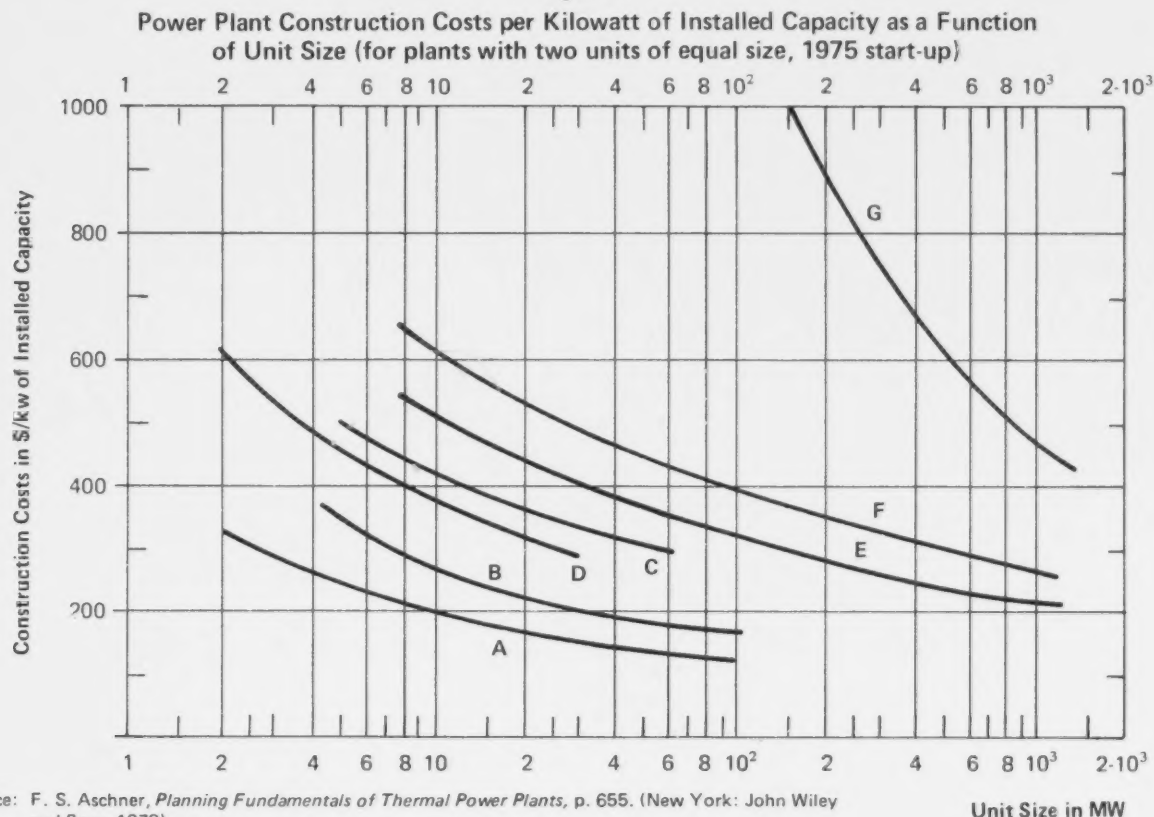
Average Heat Rate for Coal-Fired Boiler-Turbine-Generator Units in the 20th and 21st Electrical World Steam Station Cost Surveys by Size Class

Size Class (MW)	Number of Unit Years Experience ^a	Mean Btu Per Net kwh Sendout
150-229	3	11,805
300-499	18	10,582
500-999	29	10,154
1,000 and above	4	9,330

^aIncludes only units in stations for which all units are in the same size class.

Source: Calculated from data from the 20th and 21st Steam Station Cost Surveys published in *Electrical World*, Nov. 15, 1977 and Nov. 15, 1979.

Figure 2



Source: F. S. Aschner, *Planning Fundamentals of Thermal Power Plants*, p. 655. (New York: John Wiley and Sons, 1978)

- A - Jet type gas-turbine plants without recuperator
- B - Jet type gas-turbine plants with recuperator
- C - Industrial type gas-turbine plants with recuperator
- D - Diesel plants for continuous service

- E - Conventional steam power plants, oil fired
- F - Conventional steam power plants, bituminous-coal fired
- G - Nuclear LWR steam power plants

Table 2
Average Annual Operation and Maintenance Costs for Coal-Fired Steam Power Plants, by Size of Unit
(in power plants with two identical units, 1975)

Unit Size (MW)	Annual O and M Costs as a Percentage of Construction Costs	Annual O and M Costs per KWH of Installed Capacity (dollars)
10	3.0	20
50	2.2	10
250	1.8	6
1,000	1.5	4

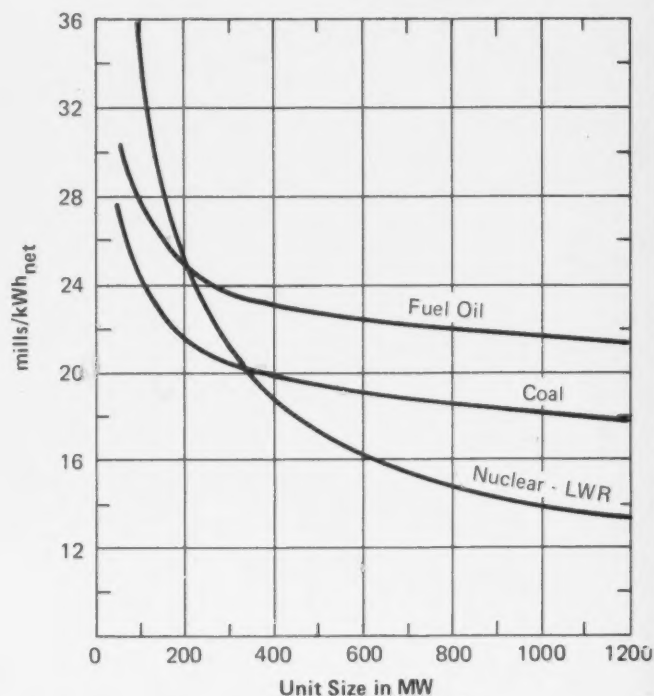
Source: F. S. Aschner, *Planning Fundamentals of Thermal Power Plants*, p. 660.

In addition to the economies of scale associated with the size of generating unit, there are economies of scale associated with the number of units installed in a station. For example, it has been estimated that labor requirements per unit of installed capacity for a station comprised of two 400-megawatt units are only about 65 percent of that for a single 400-megawatt unit station; and for a four 400-megawatt unit station, labor requirements per unit of installed capacity are only about 50 percent of that for a single 400-megawatt unit station.³ Thus it can be seen that labor requirements per unit of installed capacity decline substantially as the number of units per station is expanded from one to two and from two to four. In addition it should be noted that there are certain components of a plant whose cost is little affected by the number of units at a station. These

³Calculated from data contained in manning tables obtained from Utah Power and Light Company, Salt Lake City, Utah.

include office space, shop docks, and landscaping. Coal handling equipment and cooling facilities can also be operated at less cost per kwh at installations with a larger number of units. Land requirements per unit of installed capacity will also be smaller for stations with a larger number of units. However, it must be realized that land requirements for certain facilities will increase roughly in proportion to plant size. These include coal storage areas, ash disposal areas, and areas required for cooling tower facilities.

Figure 3
Overall Cost per Net Kilowatt Hour in Steam Power Plants as a Function of Unit Size (1975)



Source: F. S. Aschner, *Planning Fundamentals of Thermal Power Plants*, p. 655.

Generating Equipment Reliability and Availability

Based on scale economy considerations alone, larger generating units and larger plant sizes would be favored hands down over smaller units and smaller plant sizes. However, there are two other aspects of performance that must be taken into consideration before a rational selection of generating unit size and plant size can be made. These include the operating availability of equipment and equipment contribution

to system reliability. Historically, larger generating units have apparently fared much worse with respect to these two criteria than smaller units. With respect to operating availability, for example, fossil-fueled generating units in the size range 800 megawatts and above for the period 1968 through 1977 showed an operating availability rate of 72.5 percent. The comparable availability rate for fossil-fired units in the size range 200 to 299 megawatts for the same period was 84.4 percent (see Table 3).

Table 3
Forced Outage Rates and Operating Availability Rates for
Fossil-Fired Electric Power Generating Units,
1968-1977

Unit Size (MW)	Forced Outage Rate (percent)	Equivalent Forced Outage Rate ^a (percent)	Operating Availability (percent)	Equivalent Availability ^b (percent)
100 - 199	4.8	7.9	86.0	82.5
200 - 299	6.1	9.7	84.4	79.9
300 - 399	8.5	15.2	79.0	72.1
400 - 599	9.7	15.2	77.5	71.8
600 - 799	13.9	23.8	73.2	64.1
800 and Above	16.2	24.8	72.5	64.4

^aWeighting partial forced outage hours by relative generation reduction.

^bWeighting partial forced outage and scheduled partial outage hours by relative generation reduction.

Source: Edison Electric Institute, *Report on Equipment Availability for the Ten-Year Period - 1968-77* (July 1979).

A principal determinant of the contribution of a unit to system reliability is the forced outage rate. Again the smaller units have a demonstrated superiority. The forced outage rate for fossil-fueled units in the 200- to 299-megawatt range for the period 1968 through 1977 was only 6.1 percent, compared to 16.2 percent for units in the range 800 megawatts and above (see Table 3). However, these availability and forced outage rates statistics must be interpreted with considerable care, due to the possibility of confounding the effects of other variables. It has been suggested that a good share of the differential between large units and small units may be attributable to the relative immaturity of design of the larger units. That is to say, if a comparison were made only among units with the same design maturity, then the availability and forced outage differentials between large and small units would be considerable smaller.⁴

There are several other variables that appear to be confounding the comparisons, including particularly, the type of duty to which the equipment is subjected. Larger units are used almost exclusively for base loading duty, while smaller units are used to a very considerable extent for cycling, i.e., load-following duty. All size classes of units show a higher forced outage rate and a lower availability rate for base loading duty than for cycling duty. Thus part of the apparent differential in operating availability and forced outage rates between large and small units may be due to the type of duty imposed on the equipment.⁵ Other possibly confounding variables include type of boiler circulation system (once-through or recirculation) and boiler steam conditions (subcritical or super critical).⁶ Thus the possibility exists that a good deal of the apparent advantage of smaller units over larger units may be due to variables historically, but not intrinsically, associated with size.

⁴Don Anson, *Availability Patterns in Fossil-Fired Steam Power Plants*, special report issued by the Electric Power Research Institute, November 1977, pp. 2-3 through 2-7.

⁵Anson, p. 2-1.

⁶Anson, p. 2-3.

The traditional approach to the calculation of the contribution of a unit to system reliability has been to determine the effective load-carrying capability of the unit.⁷ The effective load-carrying capability of a unit is related to the effect that unit has on system loss of load probability (LOLP). This effect depends mainly upon the forced outage rate for units in its size class and the size of the unit relative to the size of the system. Historically, most electric power utilities attempted to maintain system loss of load probability at some rule-of-thumb level, without attempting to make an exact determination of whether that level was optimal (or near optimal) from the standpoint of some economically defensible criterion. In recent years the traditional approach has been called into question. The real economic problem boils down essentially to balancing the benefits of extra reliability with the costs of providing that extra reliability. Within this framework it has been suggested that it makes more sense to employ a reliability measure that is related to expected relative load curtailment rather than a measure (such as loss of load probability) that is related to the fraction of time spent in a shortage condition, no matter how extensive the load curtailment.⁸

The most comprehensive discussion to date of the relative advantages and disadvantages of large and small electric power plants in the Rocky Mountain area is contained in a report produced by the Los Alamos Scientific Laboratory.⁹ Employing the traditional reliability assessment approach, the Los

⁷See L. L. Garver, "Effective Load Carrying Capability of Generating Units," *IEEE Transactions on Power and Systems*, Vol. PAS-85, No. 8 (August 1966).

⁸See M. L. Telson, *The Economics of Reliability for Electric Generation Systems*, report issued by the Energy Laboratory of the Massachusetts Institute of Technology, May 1973, Chs. 5 and 6, and particularly pp. 255-256. See also R. F. Wolff, "New Reliability Index Challenges LOLP," *Electrical World*, September 15, 1979, pp. 124-125 and Mohan Munasinghe, *The Economics of Power System Reliability and Planning*, (Baltimore: John Hopkins University Press, 1979).

⁹Andrew Ford and Theresa Flaim, *An Economic and Environmental Analysis of Large and Small Electric Power Stations in the Rocky Mountain West* (Los Alamos, New Mexico: Los Alamos Scientific Laboratory, 1979).

Alamos study infers that the effective load-carrying capability of nine 250-megawatt units is approximately equal to that of four 750-megawatt units; and that, by and large, the advantages of large generating units and large stations are outweighed by their disadvantages. Thus the report concludes that it is preferable to scatter nine 250-megawatt units among four stations than it is to concentrate four 750-megawatt units at one station. It should be pointed out, however, that in two out of three forced outage rate sensitivity analysis cases, the large station plan turned out to be preferable to the small station plan. Also, in one out of three capital cost sensitivity analysis cases the large station plan turned out to be economically superior to the small station plan.

The small plant plan was also found to be economically superior from the standpoint of forecasting error accommodation and financial planning considerations, generally. The large plant plan, on the other hand, was found to be superior from the standpoint of public health and safety considerations (primarily due to the smaller amount of coal required) and from the standpoint of water consumption and agricultural displacement (again, due in part to the lower heat rate imputed to the large plant plan). The Los Alamos report notes, however, that some of the differences between the two plans that are not strictly internal economic differences (such as public health and safety and agricultural displacement differences) may be due to site specific considerations and hence cannot be generalized. This is also true of differences in visibility degradation and boom town impacts, though the Los Alamos study did conclude that plume blight would be a greater problem with the large plant plan than with the small plant plan.

A preliminary report of the findings of a study commissioned by the Electric Power Research Institute (EPRI) appears to be at least in partial conflict with the conclusions of the Los Alamos report.¹⁰ The EPRI study, though, did not consider the question of optimal unit size, concentrating instead on evaluating the consequences of dispersing

units of a given size. Two options were analyzed: (1) four 550 MW units located at the same site and (2) four 550 MW units dispersed with a minimum distance of 10 kilometers separating the units. Multi-unit economies of scale were found to be significant: capital costs of the concentrated siting option were estimated to be \$179 million, or 12 percent, less than for the dispersed option; while annual operating and maintenance costs were estimated to be \$11 million, or 9 percent, less for the concentrated siting option. Overall costs over the lifetime of the project were estimated to be \$500 million, or about 10 percent, less for the concentrated siting option.

Moreover the concentrated siting option was found to be environmentally superior for most effects studied, because of the disturbance of a much smaller land area. Only with respect to the air pollution effect was the concentrated siting option not found to be superior to the dispersed siting option. Here the relative merits of the two options were found to be very sensitive to the nature of population densities surrounding the location sites and to the assumed shape of the dose-response curve reflecting the health effects of different pollution concentrations. The study also suggested that socioeconomic impacts would likely be smaller under the concentrated siting option, due in part to the greater number of construction and operating employees required for the dispersed option. The concentrated siting option was estimated to require 425 fewer construction workers and 117 fewer operating employees than the dispersed siting option.

The principal conclusions of the EPRI analysis are supported by the findings of a report by the Berkeley Energy Facility Siting (BEFS) Study organization.¹¹ The central contention of the BEFS report is that socially optimal results in the provision of electric power are achieved with the construction of power plants of between 3,000 and 7,000 mega-

¹⁰ EPRI Journal, October 1979, pp 56 and 57.

¹¹ L. L. Wiggins, D. T. Wormhoudt and C. Schroeder, *Flexibility of Scale in Large Conventional Coal-Fired Power Plants*, final report prepared by Berkeley Energy Facility Siting Study Organization for the U.S. Department of Energy, Office of the Assistant Secretary of the Environment, Policy Analysis Division (December 1978).

watts of installed capacity, consisting of generating units of between 400 and 600 megawatts each. This contention is based on inferences to the effect that (1) unit sizes larger than 600 megawatts fail to realize significant economic advantages, and (2) multi-unit economies of scale are significant up to at least six units but are substantially exhausted with 14 units (taking into account all social costs). A key element in the Wiggins and Wormhoudt argument is the use of the modular component construction increment concept to achieve maximum potential multi-unit

economies of scale, while mitigating adverse community socioeconomic impact.

In addition to other advantages of large centralized power plants previously noted, the BEFS report calls attention to potential scale economies associated with residuals abatement apparatus and facilities (particularly with respect to retrofitting with best available control technology), and with the process of satisfying regulatory requirements, including environmental impact statement preparation and litigation.

UTAH BUSINESS STATISTICS

The following two tables present the latest Bureau of Economic Analysis revised figures showing personal income and per capita income by county, and for the state.

Total Personal Income in Utah Counties, 1969 - 1978* (Residence Adjusted)

	Millions of Dollars									
	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
State of Utah	3,065.4	3,376.9	3,747.0	4,184.6	4,710.5	5,261.8	5,896.6	6,626.9	7,516.7	8,621.5
Beaver	9.0	9.9	11.4	12.7	14.3	15.7	16.2	18.6	21.0	23.9
Box Elder	79.5	86.0	93.8	105.7	119.9	132.2	142.1	159.0	177.6	206.1
Cache	98.3	109.3	123.4	140.3	159.9	174.8	197.7	226.9	251.7	290.3
Carbon	42.4	47.2	51.0	59.8	69.1	78.0	94.9	110.1	127.0	148.3
Daggett	1.6	1.7	2.0	2.0	2.3	2.5	2.6	2.9	3.4	4.3
Davis	279.2	309.2	351.0	388.4	433.4	494.0	560.0	640.4	727.0	843.8
Duchesne	14.3	16.6	19.0	27.5	37.0	42.8	46.4	49.9	56.7	66.1
Emery	9.8	11.6	11.2	18.3	22.8	23.2	29.0	39.9	50.3	60.0
Garfield	6.9	7.8	9.0	10.2	10.9	11.6	12.7	15.2	17.3	19.9
Grand	20.4	20.3	19.7	24.0	26.4	29.8	34.7	41.6	47.9	55.8
Iron	30.8	32.1	37.6	41.9	47.3	51.4	56.2	62.3	71.5	84.5
Juab	9.8	10.6	11.6	12.5	14.9	16.0	16.8	18.5	21.5	24.8
Kane	5.7	6.4	7.5	9.0	9.6	10.3	12.0	14.2	16.5	18.9
Millard	17.5	18.0	21.0	23.9	27.9	29.4	31.0	33.7	36.8	45.8
Morgan	12.2	13.6	15.2	16.8	18.8	19.3	22.6	24.6	27.1	31.5
Piute	2.5	2.7	2.9	3.2	3.5	3.7	4.2	4.7	5.2	6.3
Rich	5.0	5.0	4.9	5.1	6.0	5.2	5.2	6.1	7.0	9.3
Salt Lake	1,479.8	1,640.6	1,812.0	2,018.9	2,257.5	2,528.6	2,833.3	3,161.7	3,592.0	4,101.2
San Juan	15.2	18.0	19.0	20.9	24.9	28.1	30.8	34.4	40.1	49.1
Sanpete	25.8	28.3	31.6	35.9	45.4	41.6	44.1	47.8	51.7	60.1
Sevier	25.2	27.6	30.9	35.8	42.2	44.7	51.0	59.8	69.0	80.1
Summit	16.9	18.2	20.8	25.0	27.1	27.9	31.2	35.9	41.9	48.4
Tooele	67.0	70.8	75.0	79.3	85.1	101.3	110.5	121.1	135.1	149.6
Uintah	29.2	31.3	34.9	45.0	55.3	69.5	76.4	83.0	94.3	115.2
Utah	321.4	348.0	384.9	441.1	515.9	582.4	650.9	744.7	868.3	988.5
Wasatch	14.1	15.4	17.5	20.8	20.8	22.7	27.7	31.3	36.7	39.3
Washington	27.5	33.3	37.4	43.1	50.7	55.8	65.4	74.7	87.6	104.0
Wayne	2.8	3.3	3.6	4.3	4.9	5.4	5.9	6.3	7.5	9.7
Weber	395.4	434.0	487.3	513.1	556.6	614.1	684.9	757.4	826.8	936.7

*Revised

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System.

UTAH BUSINESS STATISTICS
Per Capita Personal Income in Utah Counties, 1969 – 1978*
 (Residence Adjusted)

Dollars

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
State of Utah	2,928	3,169	3,427	3,719	4,082	4,465	4,903	5,379	5,919	6,594
Beaver	2,300	2,606	3,009	3,263	3,557	3,917	3,976	4,558	5,130	5,590
Box Elder	2,882	3,052	3,294	3,640	4,116	4,558	4,849	5,340	5,857	6,700
Cache	2,352	2,576	2,872	3,125	3,468	3,728	4,121	4,645	5,050	5,795
Carbon	2,634	3,003	3,172	3,527	3,987	4,435	5,214	5,710	6,212	6,837
Daggett	2,733	2,455	2,932	2,801	3,117	3,263	3,329	3,675	4,555	5,405
Davis	2,878	3,100	3,411	3,724	4,005	4,490	4,908	5,486	5,955	6,580
Duchesne	2,019	2,239	2,402	3,164	3,350	3,547	3,730	3,890	4,564	5,158
Emery	1,922	2,238	2,117	3,525	3,980	3,760	4,202	5,244	5,636	5,788
Garfield	2,240	2,456	2,831	3,192	3,430	3,746	3,901	4,623	5,032	5,574
Grand	2,994	3,078	3,135	3,879	4,364	5,012	5,519	6,256	6,811	7,182
Iron	2,591	2,611	2,915	3,160	3,435	3,626	3,817	4,114	4,603	5,260
Juab	2,188	2,326	2,529	2,608	3,023	3,261	3,369	3,696	4,185	4,650
Kane	2,373	2,633	3,007	3,119	3,097	3,122	3,537	4,126	4,678	4,790
Millard	2,493	2,555	2,925	3,148	3,680	3,865	3,912	4,146	4,452	5,585
Morgan	3,203	3,404	3,709	4,000	4,370	4,500	5,093	5,381	5,825	6,734
Piute	1,885	2,372	2,611	2,688	2,857	2,993	3,393	3,694	4,225	5,115
Rich	3,101	3,074	3,049	3,034	3,711	3,251	3,090	3,670	4,146	4,840
Salt Lake	3,252	3,556	3,831	4,182	4,568	5,024	5,524	6,008	6,659	7,400
San Juan	1,639	1,849	1,869	1,891	2,195	2,447	2,580	2,831	3,260	3,833
Sanpete	2,365	2,566	2,825	3,128	3,923	3,451	3,655	3,867	4,020	4,616
Sevier	2,542	2,714	2,944	3,381	3,856	3,988	4,344	4,811	5,294	5,788
Summit	2,872	3,083	3,470	4,038	4,202	4,279	4,667	5,276	5,833	6,382
Tooele	3,104	3,270	3,396	3,548	3,853	4,578	4,835	5,323	5,828	6,328
Uintah	2,356	2,447	2,623	3,196	3,572	4,273	4,375	4,689	5,243	6,221
Utah	2,388	2,503	2,665	2,890	3,258	3,544	3,934	4,384	4,834	5,331
Wasatch	2,438	2,597	2,818	3,200	3,161	3,528	4,139	4,524	5,022	5,245
Washington	2,115	2,398	2,513	2,820	3,157	3,166	3,665	3,940	4,417	4,992
Wayne	1,876	2,205	2,423	2,679	3,172	3,247	3,438	3,618	4,146	5,021
Weber	3,151	3,426	3,788	3,883	4,238	4,617	5,129	5,610	6,079	6,884

* Revised.

Source. U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System.

Utah Business Statistics

Statewide Statistical Data				% Chg.	12 Mo. Average Ending		
	Dec. 1979	Nov. 1979	Dec. 1978	From Year Ago	Dec. 1979	Dec. 1978	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.)*	43,437	54,961	43,913	-1.1	41,670.6	34,600	20.4
Livestock and Livestock Products (thous. of dol.)	31,803	41,834	31,843	-0.1	31,856.4	26,600	19.8
Crops (thous. of dol.)	11,634	13,127	12,070	-3.6	9,812.6	8,410	16.7
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	64.2	69.2	59.5	7.9	69.4	51.4	35.0
Lambs (cwt)	68.6	63.7	60.6	13.2	63.5	59.3	7.1
Turkeys (per lb.)	.51	.51	.54	-5.6	.05	.47	6.4
Milk, Wholesale (cwt)	12.8	12.5	11.3	13.3	11.7	10.2	4.7
Alfalfa Hay, Baled (per ton)	59.0	57.0	48.0	22.9	52.9	49.5	6.9
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	15,922	16,195	15,921	0.0	15,914.6	19,194	-17.1
Calves (thous. of lbs.)	na	7	na	na	na	17	na
Sheep and Lambs (thous. of lbs.)	212	233	231	-8.2	216.1	225	-4.0
Hogs and Pigs (thous. of lbs.)	2,072	2,856	2,072	0.0	2,361.9	1,920	23.0
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,216	3,183	3,054	5.3	3,054.0	2,817	8.4
Investments, Total, Utah Member Banks (mil. of dol.) ^a	835	831	826	1.1	832.1	777	7.1
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	4,022	3,916	3,826	5.1	3,812.6	3,537	7.8
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	51	62	67	-23.9	54.3	55	-1.3
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,289	1,258	1,259	2.4	1,171.9	1,141	2.7
Time Deposits, Total, Utah (mil. of dol.) ^a	2,683	2,597	2,500	7.3	2,587.7	2,344	10.4
Savings, Savings and Loan Association (mil. of dol.) ^b	1,726.6	1,672.2	1,505.7	14.7	1,618.4	1,450.3	11.6
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	1,792	2,148	2,308	-22.4	2,442.7	2,386.3	2.4
New Corporations (no.)	364	371	417	-12.7	403.8	399	1.2
Tax Collections by the State of Utah (thous. of dol.) ^a	33,574.5	127,745.6	23,814.8	41.0	71,584.2	61,935.3	15.6
Total Tax Collections	3,579.8	82,055.4	1,381.5	159.1	30,527.9	38,849.5	-21.4
Sales & Use Tax	3,697.8	6,075.8	3,476.6	6.4	5,635.2	4,453.8	26.5
Motor Fuel Tax	23,172.8	35,033.3	14,990.1	54.6	24,673.5	19,930.6	23.8
Individual Income Tax	1,188.0	621.5	584.1	103.4	3,114.5	2,849.6	9.3
Corporation Franchise Tax							
Employment							
Civilian Labor Force (thous.) ^c	632.0	632.7	602.7	4.9	618.2	586.7	5.4
Total Employed Persons	601.8	606.3	573.0	5.0	592.9	559.7	5.9
Unemployed	30.2	26.4	29.7	1.7	28.4	26.8	6.0
Percent Total Labor Force	4.8	4.2	4.9	-2.0	4.6	4.6	0.0
Employees on Nonagricultural Payrolls (thous. of jobs)	573.5	576.2	543.5	5.5	556.6	524.3	6.2
Manufacturing	88.6	88.8	85.0	4.2	88.9	79.9	11.3
Mining	18.1	18.2	17.1	5.8	17.6	16.0	10.0
Contract Construction	34.5	37.6	32.7	5.5	37.2	34.7	7.2
Transportation, Communication and Utilities	34.9	35.1	32.7	6.7	34.2	31.6	8.2
Wholesale Trade	35.6	35.4	32.2	10.6	34.8	31.3	11.2
Retail Trade	106.2	104.1	102.1	4.0	100.1	88.0	13.8
Finance, Insurance and Real Estate	26.4	26.3	25.2	4.8	25.8	24.5	5.3
Services ^d	103.0	103.3	93.5	10.2	99.8	91.0	9.7
Federal Government	35.5	35.6	35.8	-0.8	37.0	37.0	0.0
State Government ^e	33.3	34.4	33.2	0.3	32.0	31.8	0.6
Local Government ^e	57.2	57.3	54.0	5.9	55.1	51.6	6.8
Average Weekly Hours:							
Manufacturing	39.7	39.8	40.0	-0.8	39.0	39.6	-1.5
Mining	41.9	41.3	42.1	-0.5	41.7	42.7	-2.3
Contract Construction	37.0	38.7	38.4	-3.6	37.4	39.3	-4.8
Wholesale Trade	37.6	37.5	36.6	2.7	37.6	36.8	2.2
Retail Trade	28.6	27.6	28.2	1.4	28.1	28.6	-1.7
Amount of Unemployment Comp. (thous. of dol.)	3,917.6	2,800.6	3,903.6	0.4	3,874.6	3,244.8	19.4
Construction							
Total Construction (thous. of dol.)	79,183	109,962	70,168	12.8	123,298.0	106,359	15.9
Residential	28,317	45,789	34,608	-18.2	50,145.0	59,042	-1.9
Nonresidential	42,114	33,676	24,668	70.7	48,299.1	37,019	30.5
Public Works and Utilities	8,752	30,457	10,892	-19.6	14,842.7	10,419	42.5
Total Permit Construction (thous. of dol.) ^f	62,181.2	90,968.8	63,701.9	-2.4	103,265.3	95,290.2	8.4
Residential	27,941.1	31,981.6	33,388.5	-16.3	54,151.6	61,207.7	-11.5
Nonresidential	20,158.9	46,693.1	27,389.8	-26.4	40,612.4	29,256.7	38.8
Additions, Alterations and Repairs	14,081.2	9,294.1	2,923.6	381.6	7,996.4	5,902.2	35.5
New Dwelling Units (no.)	609	773	909	-33.0	1,410.1	1,772	-20.4
Tourism/Travel							
Air Passengers (total no. on and off)	376,723	348,670	360,435	4.5	386,007.3	351,817	9.7
Highway Traffic Count Across State Lines	31,887	33,845	29,650	7.5	38,451.4	41,541	-7.4
Transient Room Taxes (thous. of dol.)	9.9	486.2	.5	1,880.0	183.5	156.4	17.5
Visits, State, Nat'l. Parks, Monuments (thous.)	225.1	283.7	320.3	-29.7	1,006.7	1,159.4	-13.2
General							
New Cars and Truck Sales	na	na	na	na	na	na	na
C.P.I. (National Index - 1967=100)	229.9	227.5	202.9	13.3	216.8	195.4	11.0
Telephones in Service. (Business)	75,310	75,413	71,602	5.2	73,762.0	70,036	5.3
Telephones in Service. (Residential)	406,269	406,057	388,446	4.6	396,402.3	377,438	5.0
Electric Customers (Commercial)	32,177	32,282	31,190	3.2	31,749	30,223	5.1
Electric Customers (Residential)	347,733	344,669	334,049	4.1	340,694	325,194	4.8
Natural Gas Customers (Residential & Commercial)	370,018	364,335	354,177	4.5	360,172.1	342,264	5.2
Natural Gas Customers (Industrial)	618	635	647	-4.5	653.6	668	-2.2
Production							
Net Electric Power Utilized (mil. of kwh)	1,087.3	1,010.0	1,065.6	2.9	906.8	921.6	-1.6
Crude Oil to Refineries (thous. of bbls.)	5,310.5	4,994.1	5,298.6	0.2	4,916.8	5,194.0	-5.3
	Nov. 1979	Oct. 1979	Nov. 1978		Nov. 1979	Nov. 1978	
Crude Oil Production (thous. of bbls.)	2,176.1	2,158.2	5,605	-61.2	2,294.1	3,054.6	-24.9
Natural Gas Production (mil. of cu. ft.)	6,789.7	7,002.8	6,816	-0.4	6,189.7	6,554.7	-5.6
Coal (thous. short tons)	922	954	1,044	-11.7	986.2	886	11.3
Copper (thous. metric tons) ^g	14,787	15,169	13,918	6.2	15,518.8	15,464	0.4

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA	Dec. 1979	Nov. 1979	Dec. 1978	% Chg.	12 Mo. Average Ending		
				From Year Ago	Dec. 1979	Dec. 1978	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non Ag. Employment (thous.)*	409.3	409.5	388.2	5.4	397.1	373.6	6.3
Auth. Permit Construction (mil. of dol.)	37.5	67.3	33.1	13.3	66.9	60.6	10.4
New Dwelling Units	277	444	513	46.0	872.3	1,136	-23.2
Postal Receipts (thous.)†	5,094.5	4,215	4,843.4	5.2	4,823.6	4,129.8	16.8
Electric Customers (Residential)	266,505	263,970	256,373	4.0	261,519.3	250,159	4.5
Electric Customers (Commercial)	20,939	21,066	20,317	3.1	20,750.8	19,705	5.3
Natural Gas Customers (Residential)	274,447	270,420	262,532	4.5	267,733.9	254,004	5.4
Natural Gas Customers (Industrial)	456	468	485	6.0	464.6	482	-3.6
Department Store Sales (mil. of dol.)	51,376	34,137	50,447	1.8	26,279	25,422	3.4
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele) (thous.)*	312.5	312.6	268.6	16.3	295.8	275.4	7.4
Auth. Permit Construction (mil. of dol.)	13.9	30.2	5.7	143.9	16.3	7.7	111.7
New Dwelling Units	28	20	18	55.6	50	64	-22.2
Postal Receipts (thous.)†	4,005.5	3,388.8	3,830.7	4.6	3,924.1	3,469.5	13.1
Natural Gas Customers (Residential)	57,364	56,755	56,880	0.9	56,824	56,056	1.4
Natural Gas Customers (Industrial)	166	168	183	9.3	173	181	-4.6
Telephones in Service. (Business)†	41,609	41,719	39,797	4.6	40,902	38,984	4.9
Telephones in Service. (Residential)†	207,906	207,590	199,028	4.5	203,580	193,980	4.9
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis) (thous.)*	96.8	96.9	93.7	3.3	95.3	92.1	3.5
Auth. Permit Construction (mil. of dol.)	2.2	2.7	2.8	21.4	6.9	3.0	130.0
New Dwelling Units	21	40	36	41.7	47.8	37	29.2
Postal Receipts †	419.5	339.8	428.9	2.2	378.7	321.3	17.9
Natural Gas Customers (Residential)	21,601	21,273	21,253	1.6	21,261	21,049	1.0
Natural Gas Customers (Industrial)	61	63	64	4.7	61.8	67	-7.8
Telephones in Service. (Business)†	6,957	6,980	6,615	5.2	6,818.5	6,479	5.2
Telephones in Service. (Residential)†	42,316	42,334	41,066	3.0	41,770.2	40,435	3.3
Mountainlands (Utah, Wasatch, Summit Counties)							
Non Ag. Employment (thous.)*	72.9	73.8	68.5	6.4	70.8	66.0	7.3
Auth. Permit Construction (mil. of dol.)	13.5	8.5	21.9	38.4	17.5	17.9	-2.2
New Dwelling Units	194	112	225	31.6	276.1	336	-17.8
Postal Receipts (thous.)†	697.3	575.9	673.4	3.5	643.0	511.6	25.7
Electric Customers (Residential)	32,464	32,464	30,798	5.4	31,407.8	29,660	5.9
Electric Customers (Commercial)	3,044	2,997	2,818	8.0	2,925.8	2,730	7.2
Natural Gas Customers (Residential)	57,938	56,780	55,051	5.2	56,013	52,625	6.4
Natural Gas Customers (Industrial)	93	96	95	2.1	94.8	98	-3.3
Provo							
Non Ag. Employment (thous.) (Utah Co.)*	67.6	68.5	65.2	3.7	64.9	60.9	6.6
Auth. Permit Construction (mil. of dol.)	2.9	2.1	13.1	77.9	3.6	4.4	-18.2
New Dwelling Units	17	27	34	50.0	67.6	58	16.6
Postal Receipts (thous.)†	354.2	330.2	359.8	1.6	354.0	291.5	21.4
Natural Gas Customers (Residential)	15,316	14,873	14,488	5.7	14,751.0	14,074	4.8
Natural Gas Customers (Industrial)	43	44	47	8.5	45.4	47	-3.4
Telephones in Service. (Business)†	6,258	6,266	6,003	4.2	6,115.3	5,974	2.4
Telephones in Service. (Residential)†	38,808	39,268	37,016	4.8	36,956.3	35,059	5.4
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non Ag. Employment (thous.)*	12.8	13.2	12.3	4.1	13.1	12.2	7.4
Auth. Permit Construction (mil. of dol.)	1.1	2.1	4.7	134.0	2.3	2.1	9.2
New Dwelling Units	21	28	31	32.3	40.2	43	-6.5
Postal Receipts (thous.)†	91.3	61.5	80.9	12.9	75.9	65.8	15.3
Electric Customers (Residential)	8,837	8,825	8,518	3.7	8,704	8,340	4.4
Electric Customers (Commercial)	1,920	1,925	1,921	0.1	1,904	1,902	0.1
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non Ag. Employment (thous.)*	10.9	11.2	10.3	5.8	11.5	10.5	9.5
Auth. Permit Construction (mil. of dol.)	7.7	9.1	1.2	35.8	3.1	2.2	40.9
New Dwelling Units	12	14	45	73.3	27.3	33	-17.3
Postal Receipts (thous.)†	59.7	49.1	60.2	0.8	52.5	44.1	19.0
Electric Customers (Residential)	4,851	4,796	4,588	5.7	4,704	4,392	7.1
Electric Customers (Commercial)	755	761	741	1.9	750	731	2.6
Natural Gas Customers (Residential)	4,752	4,729	4,764	0.3	4,677	4,613	1.4
Natural Gas Customers (Industrial)	7	7	8	12.5	7.9	9	-12.2
Bear River (Box Elder, Cache, Rich Counties)							
Non Ag. Employment (thous.)*	31.6	32.1	30.3	4.3	30.6	29.2	4.8
Auth. Permit Construction (mil. of dol.)	5.8	6.5	2.3	152.2	4.3	5.4	-20.4
New Dwelling Units	80	95	39	105.1	72.4	80	9.5
Postal Receipts (thous.)†	269.3	196	253.1	6.4	222.4	189.7	17.2
Electric Customers (Residential)	13,977	13,926	13,539	3.2	13,737	13,227	3.9
Electric Customers (Commercial)	1,671	1,715	1,670	0.1	1,691	1,646	2.7
Natural Gas Customers (Residential)	23,925	23,585	23,278	2.8	23,358	22,599	3.4
Natural Gas Customers (Industrial)	47	51	48	2.1	48	48	-0.2
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non Ag. Employment (thous.)*	19.9	20.2	18.9	5.3	19.7	18.0	9.4
Auth. Permit Construction (mil. of dol.)	86	1.7	6	43.3	2.6	2.6	0.0
New Dwelling Units	19	30	4	375	34	42	-18.3
Postal Receipts (thous.)†	na	na	na	na	na	na	na
Electric Customers (Residential)	10,799	10,677	10,321	4.6	10,516	9,973	5.4
Electric Customers (Commercial)	1,431	1,402	1,371	4.4	1,394	1,334	4.5
Natural Gas Customers (Residential)	8,956	8,821	8,552	4.7	8,624	8,351	3.3
Natural Gas Customers (Industrial)	15	15	12	25.0	12.3	12	2.5
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non Ag. Employment (thous.)*	15.9	16.0	15.1	5.3	16.2	15.2	6.6
Auth. Permit Construction (mil. of dol.)	2.6	3.9	3.4	-23.5	4.9	4.8	2.1
New Dwelling Units	46	50	52	-11.5	88.5	105	-15.7
Postal Receipts (thous.)†	122.3	88.0	118.5	3.2	106.3	75.8	40.2
Electric Customers (Residential)	10,306	10,322	9,912	3.9	10,109	9,574	5.6
Electric Customers (Commercial)	2,417	2,416	2,352	2.8	2,379	2,200	8.2

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BUSINESS STATISTICS Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices:
U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
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Security
Construction: Dodge Construction Statistics and BEBR
Air Passengers: Salt Lake International Airport, statistics
service
Traffic Count: Utah Department of Transportation, Travel
Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest
Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile
Dealers Registrations Service Company
Telephone, electric, natural gas customers:
cooperating Utah utility companies
Net Electric Power Utilized: cooperating
Utah power companies
Crude Oil to Refineries: cooperating
Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^a End of Period, includes member banks of Federal Reserve
System
- ^b As of the close of business on last day of the month
- ^c Current year—preliminary data; previous
year—final figures.
- ^d Includes nonprofit and religious
- ^e Includes public schools and colleges
- ^f Total new construction plus additions, alterations and
repairs
- ^g Beginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231
- ^h Includes Salt Lake County and Bountiful
- ⁱ Includes Weber and Morgan Counties
- ^j Includes Orem and Springville
- r revised
- x increase from zero or decrease to zero
- na not available

UTAH ECONOMIC AND BUSINESS REVIEW

Vol. 40, No. 2

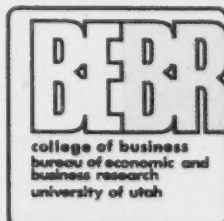
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Selected Business Statistics Utah Counties

by Ronda Brinkerhoff, Research Analyst

Utah Economic and Business Review

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Except for declines in construction and new car and truck sales, the leading economic indicators show 1979 to have been a good year for most Utahns. Population was up; so were wages, total and per capita income, taxable sales and tax collections.

Continuing a 20-year tradition, this March issue of *Utah Economic and Business Review* details for each county and the state as a whole the population trends, labor market data, income and tax data, construction activity, and other economic guides. These statistics, shown in the accompanying tables and figures, are the best available indicators of the economic health and growth of the state during the period 1976 through 1979.

Population

Only two counties showed population declines in 1979 as compared with the previous year — Grand, 1.3 percent, and Kane, 2.5 percent. Washington registered a net growth of 9.7 percent. No growth for 1979 as compared with 1978 was registered only in Garfield and Wayne Counties. For the state as a whole, the increase was 3.8 percent, continuing a steady growth pattern that showed a 3.6 percent increase in 1978 over 1977, 3.2 percent increase in 1977 over 1976, and a 2.7 percent increase in 1976 over 1975.

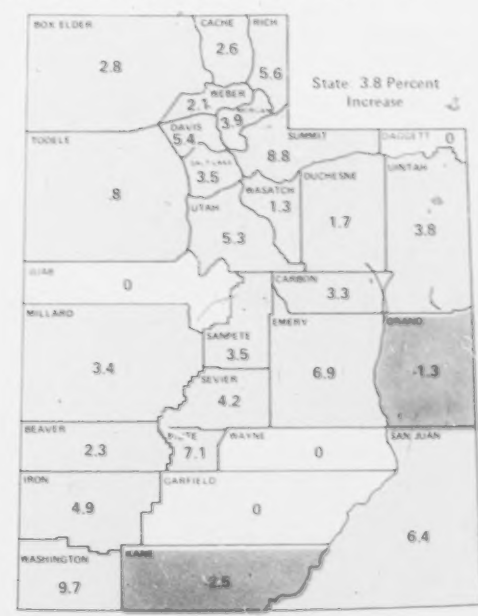


Figure 1. Population
Percent Change, 1978 - 1979

Employment and Wages

Increase in non-agricultural jobs in Utah in 1979 over 1978 was a healthy 5.4 percent. And again, only two counties (Daggett and Piute) showed declines. As illustrated in Figure 2, greatest gains were in Carbon, Emery and Rich Counties — all above 11 percent. Looking back to 1975, for the state as a whole the increases were 7.9 percent in 1978 over 1977, and 5.1 percent for both 1977 over 1976 and 1976 over 1975.

Non-agricultural wage rates also showed good growth — up in all but Daggett and Piute Counties. The 7.0 percent average increase registered for the state was down slightly from the 7.4 percent growth in 1978 over 1977, and the 8.3 and 8.5 percent increases for 1977 and 1976, respectively.

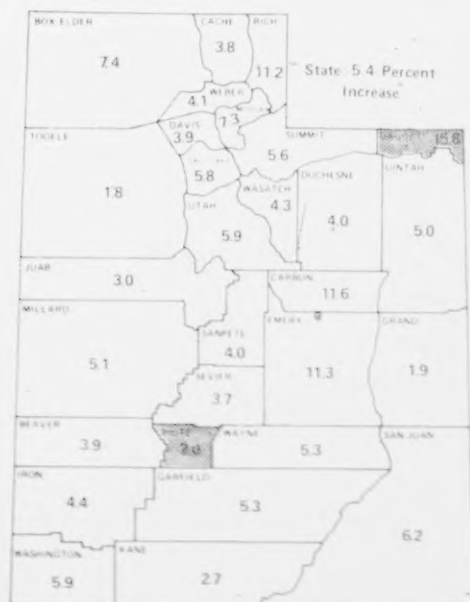


Figure 2. Nonagricultural Employment
Percent Change 1978 - 1979

Income and Expenditures

While final 1979 figures for personal income are not yet available, Utahns did make and spend more money last year than they did in 1978. On a state basis, gross taxable sales were up 12.9 percent. In Rich County, the increase was 57.5 percent. Other sizeable increases were registered in Summit (35.9 percent), Garfield (32 percent), and Duchesne (29.2 percent). On the other hand, greater than 20 percent decreases were recorded for Daggett and Emery Counties. The other counties experiencing declines were San Juan and Wasatch, showing 5.8 percent and 1.0 percent losses, respectively.

Construction

More than half of Utah's counties suffered declines in construction — an economic illness which has been plaguing the entire country. Statewide, the number of new dwelling units begun in 1979 was down 21.1 percent from the previous year. Counties hardest hit were Grand, Garfield, Tooele, Utah, Cache and Salt Lake, all of which experienced declines of more than 25 percent. Paradoxically, a 92 percent increase was registered in Morgan County, and Piute saw a 57.1 percent increase.

Car and Truck Sales

Registrations of new cars and trucks took a big dip statewide (14.6 percent), with sales up in only three counties — Daggett, Piute and Washington. Registrations were down by 14.2 percent in Salt Lake, 17.2 percent in Weber, 19.7 percent in Tooele, and 16.6 percent in Washington Counties.

Comparing the Statistics

Percentage changes between 1978 and 1979 for six of the leading indicators, as they relate to each of Utah's counties and for the state as a whole, are portrayed graphically in Table 1.

Table 1
Six Selected Economic Indicators
Percent Change 1978-1979

	Population	Average Non-Ag Employment	Average Monthly Non-Ag Wage	Property Taxes Charged	Gross Taxable Sales	No. New Dwelling Units
Beaver	2.3	3.9	4.4	-.8	5.6	-26.9
Box Elder	2.8	7.4	7.0	-2.4	17.3	11.5
Cache	2.6	3.8	7.0	3.5	12.4	-26.6
Carbon	3.3	11.6	11.4	6.4	19.7	10.1
Daggett	0	-15.8	-15.6	.6	-20.7	33.3
Davis	5.4	3.9	6.5	4.9	15.9	-22.8
Duchesne	1.7	4.0	8.1	-8.0	29.2	-15.7
Emery	6.9	11.3	5.7	45.0	-28.6	12.9
Garfield	0	5.3	10.0	-4.1	32.0	-28.9
Grand	-1.3	1.9	2.1	9.2	13.4	-53.4
Iron	4.9	4.4	6.5	16.1	7.2	-25.5
Juab	0	3.0	6.2	5.0	3.5	0
Kane	-2.5	2.7	2.8	5.6	3.4	26.4
Millard	3.4	5.1	9.9	6.8	9.1	-8.1
Morgan	3.9	7.3	8.0	-4.2	12.6	92.0
Piute	-7.1	-2.0	-5.6	5.9	2.3	57.1
Rich	5.6	11.2	13.7	9.1	57.5	6.7
Salt Lake	3.5	5.8	7.5	13.4	12.1	-26.5
San Juan	6.4	6.2	7.9	-2.5	-5.8	-51.8
Sanpete	3.5	4.0	6.5	26.9	20.2	-5.9
Sevier	4.2	3.7	3.4	17.9	15.8	-11.7
Summit	8.8	5.6	3.4	16.6	35.9	11.4
Tooele	.8	1.8	5.3	-1.7	15.4	-27.2
Uintah	3.8	5.0	6.0	10.1	22.5	-13.7
Utah	5.3	5.9	7.3	8.8	13.3	-28.8
Wasatch	1.3	4.3	6.2	-3.9	-1.0	15.3
Washington	9.7	5.9	6.8	9.9	20.5	-13.9
Wayne	0	5.3	10.5	7.9	3.9	10.5
Weber	2.1	4.1	5.4	3.4	11.8	-4.5
State (Totals)	3.8	5.4	7.0	10.2	12.9	-21.1

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Selected Business Statistics for Utah Counties

	1976	1977	1978	1979	Percent Change 1978-79
Beaver					
Population	4,200	4,300	4,300 ^f	4,400 ^p	2.3
Labor Market Data					
Average civilian labor force	1,840	1,870	2,013 ^f	2,051 ^p	1.9
Average nonagricultural employment	1,085	1,155	1,202 ^f	1,249 ^p	3.9
Income Data					
Average monthly nonagricultural wage (\$)	616	674	755 ^f	788 ^p	4.4
Annual nonagricultural payroll (\$ thousands)	8,026	9,346	10,896 ^f	11,810 ^p	8.4
Total personal income (\$ thousands)	18,600	21,000	23,900	27,400 ^p	1
Per capita personal income (\$)	4,558	5,130	5,590	6,200 ^p	1
Tax Data					
Total assessed valuation (\$ thousands)	13,846	13,754	14,499	15,237	5.1
Property taxes charged* (\$ thousands)	926	902	974	966	-0.8
Gross taxable sales (\$ thousands)	12,352	13,175	15,250	16,097	5.6
Net local sales tax collections (\$ thousands)	90	97	112	118	5.4
Construction					
New dwelling units (number)	46	64	52	38	-26.9
Value of new residential construction (\$ thousands)	1,267	1,462	1,786	1,255	-29.7
Value of new nonresidential construction (\$ thousands)	73	399	456	396	-13.2
Value total construction (\$ thousands)	1,445	1,973	2,397	1,798	-25.0
Miscellaneous					
New car and truck registrations (number)	210	206	198	181	-8.6
In lieu tax payments under Public Law 94-565 (\$ thousands)	-	201	205	175	-14.6
Box Elder					
Population	31,000	31,200	32,100 ^f	33,000 ^p	2.8
Labor Market Data					
Average civilian labor force	13,470	13,990	15,040 ^f	15,899 ^p	5.7
Average nonagricultural employment	8,797	9,350	10,131 ^f	10,879 ^p	7.4
Income Data					
Average monthly nonagricultural wage (\$)	835	896	943 ^f	1,009 ^p	7.0
Annual nonagricultural payroll (\$ thousands)	88,137	100,583	114,688 ^f	131,708 ^p	14.8
Total personal income (\$ thousands)	159,000	177,600	206,100	236,800 ^p	1
Per capita personal income (\$)	5,340	5,857	6,700	7,200 ^p	1
Tax Data					
Total assessed valuation (\$ thousands)	100,924	104,874	113,085	118,466	4.8
Property taxes charged* (\$ thousands)	6,186	6,269	6,733	6,572	-2.4
Gross taxable sales (\$ thousands)	84,654	98,399	106,396	124,785	17.3
Net local sales tax collections (\$ thousands)	619	723	782	917	17.3
Construction					
New dwelling units (number)	174	306	339	378	11.5
Value of new residential construction (\$ thousands)	4,989	9,014	11,031	15,809	43.3
Value of new nonresidential construction (\$ thousands)	2,156	2,669	6,761	3,706	-45.2
Value total construction (\$ thousands)	7,990	12,692	18,709	20,992	-12.2
Miscellaneous					
New car and truck registrations (number)	1,542	1,726	1,707	1,484	-13.1
In lieu tax payments under Public Law 94-565 (\$ thousands)	-	719	747	654	-12.5
Cache					
Population	49,200	51,600	53,600 ^f	55,000 ^p	2.6
Labor Market Data					
Average civilian labor force	21,970	22,630	23,740 ^f	24,440 ^p	2.9
Average nonagricultural employment	17,055	17,798	18,805 ^f	19,521 ^p	3.8
Income Data					
Average monthly nonagricultural wage (\$)	638	673	733 ^f	784 ^p	7.0
Annual nonagricultural payroll (\$ thousands)	130,551	143,754	165,449 ^f	183,872 ^p	11.1
Total personal income (\$ thousands)	226,900	251,700	290,300	333,400 ^p	1
Per capita personal income (\$)	4,645	5,050	5,795	6,100 ^p	1
Tax Data					
Total assessed valuation (\$ thousands)	105,593	114,050	120,542	134,093	11.2
Property taxes charged* (\$ thousands)	6,126	6,849	7,673	7,940	3.5
Gross taxable sales (\$ thousands)	158,061	187,667	207,082	232,802	12.4
Net local sales tax collections (\$ thousands)	1,156	1,379	1,522	1,711	12.4
Construction					
New dwelling units (number)	712	798	610	448	-26.6
Value of new residential construction (\$ thousands)	17,741	21,626	23,894	17,500	-26.8
Value of new nonresidential construction (\$ thousands)	14,415	5,681	17,197	8,875	-48.4
Value total construction (\$ thousands)	33,640	29,882	43,496	28,525	-34.4
Miscellaneous					
New car and truck registrations (number)	2,068	2,122	2,324	1,810	-22.1
In lieu tax payments under Public Law 94-565 (\$ thousands)	-	175	199	161	-19.1

	1976	1977	1978	1979	Percent Change 1978-79
Carbon					
Population	19,400	20,500	21,300 ^f	22,000 ^p	3.3
Labor Market Data:					
Average civilian labor force	7,420	7,730	8,636 ^f	9,293 ^p	7.6
Average nonagricultural employment	6,319	6,639	7,291 ^f	8,135 ^p	11.6
Income Data:					
Average monthly nonagricultural wage (\$)	875	957	1,031 ^f	1,149 ^p	11.4
Annual nonagricultural payroll (\$ thousands)	66,347	76,232	90,176 ^f	112,172 ^p	24.4
Total personal income (\$ thousands)	110,100	127,000	148,300	170,400 ^p	↑
Per capita personal income (\$)	5,710	6,212	6,837	7,700	↑
Tax Data:					
Total assessed valuation (\$ thousands)	45,505	55,904	62,076	104,920	69.0
Property taxes charged* (\$ thousands)	3,674	4,466	4,957	5,272	6.4
Gross taxable sales (\$ thousands)	103,123	109,487	127,876	153,071	19.7
Net local sales tax collections (\$ thousands)	754	805	940	1,125	19.7
Construction:					
New dwelling units (number)	294	245	188	207	10.1
Value of new residential construction (\$ thousands)	7,683	7,466	6,814	9,067	33.1
Value of new nonresidential construction (\$ thousands)	11,684	19,521	3,723	5,563	49.4
Value total construction (\$ thousands)	20,719	28,595	11,461	16,243	41.7
Miscellaneous:					
New car and truck registrations (number)	1,271	1,169	1,310	1,121	-14.4
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	315	334	296	-11.4
Daggett					
Population	800	800	800 ^f	800 ^p	0.0
Labor Market Data:					
Average civilian labor force	270	300	347 ^f	303 ^p	-12.7
Average nonagricultural employment	233	269	330 ^f	278	-15.8
Income Data:					
Average monthly nonagricultural wage (\$)	271	804	884 ^f	746 ^p	-15.6
Annual nonagricultural payroll (\$ thousands)	2,016	2,597	3,504 ^f	2,945 ^p	-15.9
Total personal income (\$ thousands)	2,900	3,400	4,300	4,900 ^p	↑
Per capita personal income (\$)	3,675	4,555	5,405	6,100 ^p	↑
Tax Data:					
Total assessed valuation (\$ thousands)	4,028	5,484	9,916	11,678	17.8
Property taxes charged* (\$ thousands)	212	266	504	501	-0.6
Gross taxable sales (\$ thousands)	3,132	6,023	4,797	3,805	-20.7
Net local sales tax collections (\$ thousands)	23	44	35	28	-20.0
Construction:					
New dwelling units (number)	17	14	9	12	33.3
Value of new residential construction (\$ thousands)	330	436	279	297	6.4
Value of new nonresidential construction (\$ thousands)	2,348	55	119	88	-26.1
Value total construction (\$ thousands)	2,689	508	421	412	-2.1
Miscellaneous:					
New car and truck registrations (number)	25	17	29	30	3.4
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	36	37	32	-13.5
Davis					
Population	119,000	124,000	130,000 ^f	137,000 ^p	5.4
Labor Market Data:					
Average civilian labor force	41,520	43,520	45,411 ^f	47,401 ^p	4.4
Average nonagricultural employment	38,774	41,017	43,059 ^f	44,752 ^p	3.9
Income Data:					
Average monthly nonagricultural wage (\$)	929	965	1,048 ^f	1,116 ^p	6.5
Annual nonagricultural payroll (\$ thousands)	432,290	474,946	541,761 ^f	599,122 ^p	10.6
Total personal income (\$ thousands)	640,400	727,000	843,800	969,300 ^p	↑
Per capita personal income (\$)	5,486	5,955	6,580	7,100 ^p	↑
Tax Data:					
Total assessed valuation (\$ thousands)	243,185	265,896	295,255	319,311	8.1
Property taxes charged* (\$ thousands)	14,982	18,302	22,805	23,933	4.9
Gross taxable sales (\$ thousands)	305,617	355,710	416,501	482,564	15.9
Net local sales tax collections (\$ thousands)	2,235	2,614	3,061	3,547	15.9
Construction:					
New dwelling units (number)	1,789	2,541	2,392	1,847	-22.8
Value of new residential construction (\$ thousands)	56,616	92,184	91,316	86,328	-5.5
Value of new nonresidential construction (\$ thousands)	20,978	22,731	40,877	41,431	1.4
Value total construction (\$ thousands)	82,450	119,403	136,986	137,513	.4
Miscellaneous:					
New car and truck registrations (number)	5,603	6,256	6,469	5,625	-13.0
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	24	26	20	-23.1

	1976	1977	1978	1979	Percent Change 1978-79
Duchesne					
Population	11,300	11,400	11,700 ^r	11,900 ^p	1.7
Labor Market Data:					
Average civilian labor force	4,860	5,040	5,267 ^r	5,408 ^p	2.7
Average nonagricultural employment	3,098	3,315	3,459 ^r	3,599 ^p	4.0
Income Data:					
Average monthly nonagricultural wage (\$)	760	843	947 ^r	1,024 ^p	8.1
Annual nonagricultural payroll (\$ thousands)	28,269	33,545	39,295 ^r	44,244 ^p	12.6
Total personal income (\$ thousands)	49,900	56,700	66,100	75,900 ^p	1
Per capita personal income (\$)	3,890	4,564	5,158	6,400 ^p	1
Tax Data:					
Total assessed valuation (\$ thousands)	184,341	161,977	136,688	135,868	-6
Property taxes charged* (\$ thousands)	10,060	8,890	7,524	6,924	8.0
Gross taxable sales (\$ thousands)	62,220	60,406	67,180	86,791	29.2
Net local sales tax collections (\$ thousands)	455	444	494	638	29.1
Construction:					
New dwelling units (number)	100	88	89	75	-15.7
Value of new residential construction (\$ thousands)	2,524	2,350	2,667	2,723	2.1
Value of new nonresidential construction (\$ thousands)	1,293	384	648	11,551	1,682.6
Value total construction (\$ thousands)	4,265	3,178	3,738	14,657	292.1
Miscellaneous:					
New car and truck registrations (number)	864	868	845	803	-5.0
In lieu tax payments under Public Law 94-565 (\$ thousands)		369	408	340	-16.7
Emery					
Population	8,300	9,300	10,100 ^r	10,800 ^p	6.9
Labor Market Data:					
Average civilian labor force	4,930	5,780	6,367 ^r	6,725 ^p	5.6
Average nonagricultural employment	3,497	4,080	4,367 ^r	4,859 ^p	11.3
Income Data:					
Average monthly nonagricultural wage (\$)	1,246	1,406	1,412 ^r	1,492 ^p	5.7
Annual nonagricultural payroll (\$ thousands)	52,311	68,829	73,998 ^r	86,996 ^p	17.6
Total personal income (\$ thousands)	39,900	50,300	60,000	68,900 ^p	1
Per capita personal income (\$)	5,244	5,636	5,788	6,400 ^p	1
Tax Data:					
Total assessed valuation (\$ thousands)	58,827	90,862	121,184	180,013	48.5
Property taxes charged* (\$ thousands)	3,522	5,980	7,674	11,131	45.0
Gross taxable sales (\$ thousands)	40,307	51,774	43,518	31,056	-28.6
Net local sales tax collections (\$ thousands)	295	381	320	228	-28.8
Construction:					
New dwelling units (number)	130	117	93	105	12.9
Value of new residential construction (\$ thousands)	3,517	3,426	2,901	2,964	2.2
Value of new nonresidential construction (\$ thousands)	2,609	2,412	5,156	5,096	-1.2
Value total construction (\$ thousands)	6,553	6,168	8,442	8,259	-1.9
Miscellaneous:					
New car and truck registrations (number)	540	538	583	519	-11.0
In lieu tax payments under Public Law 94-565 (\$ thousands)		229	320	295	7.8
Garfield					
Population	3,500	3,600	3,800 ^r	3,800 ^p	0.0
Labor Market Data:					
Average civilian labor force	640	1,730	1,754 ^r	1,822 ^p	3.9
Average nonagricultural employment	1,234	1,305	1,368 ^r	1,440 ^p	5.3
Income Data:					
Average monthly nonagricultural wage (\$)	752	618	659 ^r	725 ^p	10.0
Annual nonagricultural payroll (\$ thousands)	8,468	9,671	10,824 ^r	12,531 ^p	15.8
Total personal income (\$ thousands)	15,200	14,300	19,900	22,800 ^p	1
Per capita personal income (\$)	4,623	5,032	5,574	6,000 ^p	1
Tax Data:					
Total assessed valuation (\$ thousands)	13,716	13,881	14,513	14,862	2.4
Property taxes charged* (\$ thousands)	795	803	856	821	-4.1
Gross taxable sales (\$ thousands)	13,030	13,909	11,767	15,536	32.0
Net local sales tax collections (\$ thousands)	81	102	86	114	32.5
Construction:					
New dwelling units (number)	25	39	38	27	-28.9
Value of new residential construction (\$ thousands)	660	1,226	1,044	1,098	5.2
Value of new nonresidential construction (\$ thousands)	191	93	1,959	19,286	884.5
Value total construction (\$ thousands)	1,696	1,520	3,153	20,508	550.5
Miscellaneous:					
New car and truck registrations (number)	167	284	195	166	-14.9
In lieu tax payments under Public Law 94-565 (\$ thousands)		165	165	150	-9.1

	1976	1977	1978	1979	Percent Change 1978-79
Grand					
Population	6,900	7,300	8,000 ^f	7,900 ^P	1.3
Labor Market Data					
Average civilian labor force	3,100	3,390	3,763 ^f	3,802 ^P	1.0
Average nonagricultural employment	2,675	2,936	3,259 ^f	3,320 ^P	1.9
Income Data					
Average monthly nonagricultural wage (\$)	799	819	877 ^f	895 ^P	2.1
Annual nonagricultural payroll (\$ thousands)	25,633	28,872	34,287 ^f	35,673 ^P	4.0
Total personal income (\$ thousands)	41,600	47,900	55,800	64,100 ^P	1
Per capita personal income (\$)	6,256	6,811	7,182	8,100 ^P	1
Tax Data					
Total assessed valuation (\$ thousands)	26,451	28,542	30,257	34,715	14.7
Property taxes charged* (\$ thousands)	1,763	1,941	2,042	2,229	9.2
Gross taxable sales (\$ thousands)	32,809	41,239	52,358	59,361	13.4
Net local sales tax collections (\$ thousands)	240	303	385	436	13.2
Construction					
New dwelling units (number)	54	108	116	54	53.4
Value of new residential construction (\$ thousands)	1,348	2,686	3,887	2,325	40.2
Value of new nonresidential construction (\$ thousands)	1,387	905	1,332	839	37.0
Value total construction (\$ thousands)	2,471	4,024	5,729	3,752	34.5
Miscellaneous					
New car and truck registrations (number)	349	400	367	270	26.4
In lieu tax payments under Public Law 94-565 (\$ thousands)		241	306	270	11.8
Iron					
Population	14,800	15,600	16,400 ^f	17,200 ^P	4.9
Labor Market Data					
Average civilian labor force	6,540	6,780	7,193 ^f	7,441 ^P	3.4
Average nonagricultural employment	5,051	5,295	5,704 ^f	5,954 ^P	4.4
Income Data					
Average monthly nonagricultural wage (\$)	630	697	773 ^f	823 ^P	6.5
Annual nonagricultural payroll (\$ thousands)	38,167	44,315	52,925 ^f	58,808 ^P	11.1
Total personal income (\$ thousands)	62,300	71,500	84,500	97,100 ^P	1
Per capita personal income (\$)	4,114	4,603	5,260	5,600 ^P	1
Tax Data					
Total assessed valuation (\$ thousands)	55,671	54,869	62,529	73,797	18.0
Property taxes charged* (\$ thousands)	3,108	3,285	3,754	4,358	16.1
Gross taxable sales (\$ thousands)	64,535	71,961	82,959	88,893	7.2
Net local sales tax collections (\$ thousands)	472	529	610	653	7.0
Construction					
New dwelling units (number)	270	310	294	219	25.5
Value of new residential construction (\$ thousands)	6,918	7,643	9,104	7,883	13.4
Value of new nonresidential construction (\$ thousands)	1,465	1,716	354	1,379	289.6
Value total construction (\$ thousands)	8,562	9,669	10,119	9,963	1.5
Miscellaneous					
New car and truck registrations (number)	964	845	878	719	18.1
In lieu tax payments under Public Law 94-565 (\$ thousands)		437	448	387	13.6
Juab					
Population	5,300	5,600	5,700 ^f	5,700 ^P	0.0
Labor Market Data					
Average civilian labor force	1,980	2,080	2,120 ^f	2,130 ^P	5
Average nonagricultural employment	1,578	1,686	1,690 ^f	1,740 ^P	3.0
Income Data					
Average monthly nonagricultural wage (\$)	553	569	634 ^f	673 ^P	6.2
Annual nonagricultural payroll (\$ thousands)	10,482	11,515	12,868 ^f	14,052 ^P	9.2
Total personal income (\$ thousands)	18,500	21,500	24,800	28,500 ^P	1
Per capita personal income (\$)	3,696	4,185	4,650	5,000 ^P	1
Tax Data					
Total assessed valuation (\$ thousands)	17,718	18,011	18,800	20,140	7.1
Property taxes charged* (\$ thousands)	1,062	1,160	1,265	1,328	5.0
Gross taxable sales (\$ thousands)	15,351	17,197	20,961	21,698	3.5
Net local sales tax collections (\$ thousands)	112	126	154	159	3.2
Construction					
New dwelling units (number)	57	78	59	59	0.0
Value of new residential construction (\$ thousands)	1,537	2,404	1,624	2,195	35.1
Value of new nonresidential construction (\$ thousands)	484	1,015	27	128	374.1
Value total construction (\$ thousands)	2,241	3,561	1,779	2,455	38.0
Miscellaneous					
New car and truck registrations (number)	263	279	266	232	-12.8
In lieu tax payments under Public Law 94-565 (\$ thousands)		237	246	215	-12.6

	Percent Change				
	1976	1977	1978	1979	1978-79
Kane					
Population	3,600	3,800	4,000 ^r	3,900 ^P	-2.5
Labor Market Data:					
Average civilian labor force	1,434	1,450	1,487 ^r	1,505 ^P	1.2
Average nonagricultural employment	968	957	1,005 ^r	1,032 ^P	2.7
Income Data:					
Average monthly nonagricultural wage (\$)	484	533	569 ^r	585 ^P	2.8
Annual nonagricultural payroll (\$ thousands)	5,621	6,121	6,871 ^r	7,245 ^P	5.4
Total personal income (\$ thousands)	14,200	16,500	18,900	21,700 ^P	†
Per capita personal income (\$)	4,126	4,678	4,796	5,600 ^P	†
Tax Data:					
Total assessed valuation (\$ thousands)	8,690	10,035	11,307	11,915	5.4
Property taxes charged* (\$ thousands)	578	667	748	790	5.6
Gross taxable sales (\$ thousands)	12,341	14,191	17,403	18,000	3.4
Net local sales tax collections (\$ thousands)	90	104	128	132	3.1
Construction:					
New dwelling units (number)	72	39	72	91	26.4
Value of new residential construction (\$ thousands)	1,329	1,152	2,312	2,621	13.4
Value of new nonresidential construction (\$ thousands)	214	182	671	1,289	92.1
Value total construction (\$ thousands)	1,778	1,347	3,330	4,068	22.2
Miscellaneous:					
New car and truck registrations (number)	97	116	114	106	-7.0
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	168	169	152	-10.1
Millard					
Population	8,200	8,400	8,700 ^r	9,000 ^P	3.4
Labor Market Data:					
Average civilian labor force	3,240	3,180	3,342 ^r	3,452 ^P	3.3
Average nonagricultural employment	1,785	1,796	1,883 ^r	1,979 ^P	5.1
Income Data:					
Average monthly nonagricultural wage (\$)	548	588	655 ^r	720 ^P	9.9
Annual nonagricultural payroll (\$ thousands)	11,727	12,682	14,797 ^r	17,099 ^P	15.6
Total personal income (\$ thousands)	33,700	36,800	45,800	52,500 ^P	†
Per capita personal income (\$)	4,146	4,452	5,585	5,800 ^P	†
Tax Data:					
Total assessed valuation (\$ thousands)	32,237	32,985	33,112	35,252	6.5
Property taxes charged* (\$ thousands)	2,102	2,157	2,134	2,280	6.8
Gross taxable sales (\$ thousands)	23,376	24,568	29,388	32,069	9.1
Net local sales tax collections (\$ thousands)	171	181	216	236	9.3
Construction:					
New dwelling units (number)	31	36	62	57	-8.1
Value of new residential construction (\$ thousands)	939	1,127	1,980	2,376	20.0
Value of new nonresidential construction (\$ thousands)	1,921	4,784	1,271	673	-47.0
Value total construction (\$ thousands)	3,072	6,943	3,430	3,226	-6.0
Miscellaneous:					
New car and truck registrations (number)	418	405	437	378	-13.5
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	328	328	288	-12.2
Morgan					
Population	4,800	4,900	5,100 ^r	5,300 ^P	3.9
Labor Market Data:					
Average civilian labor force	1,910	1,940	2,094 ^r	2,206 ^P	5.3
Average nonagricultural employment	918	955	1,028 ^r	1,103 ^P	7.3
Income Data:					
Average monthly nonagricultural wage (\$)	770	815	876 ^r	946 ^P	8.0
Annual nonagricultural payroll (\$ thousands)	8,484	9,336	10,804 ^r	12,524 ^P	15.9
Total personal income (\$ thousands)	24,600	27,100	31,500	36,200 ^P	†
Per capita personal income (\$)	5,381	5,825	6,734	6,800 ^P	†
Tax Data:					
Total assessed valuation (\$ thousands)	13,952	14,161	14,544	14,809	1.8
Property taxes charged* (\$ thousands)	925	912	938	899	-4.2
Gross taxable sales (\$ thousands)	9,139	7,262	12,784	14,397	12.6
Net local sales tax collections (\$ thousands)	67	53	94	106	12.8
Construction:					
New dwelling units (number)	45	36	25	48	92.0
Value of new residential construction (\$ thousands)	1,313	1,168	894	2,093	134.2
Value of new nonresidential construction (\$ thousands)	82	122	742	276	-62.8
Value total construction (\$ thousands)	1,510	1,395	1,739	2,562	47.3
Miscellaneous:					
New car and truck registrations (number)	213	257	309	285	-7.8
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	10	11	9	-18.2

	1976	1977	1978	1979	Percent Change 1978-79
Piute					
Population	1,300	1,400	1,400 ^F	1,500 ^P	7.1
Labor Market Data:					
Average civilian labor force	516	470	490 ^F	496 ^P	1.2
Average nonagricultural employment	251	226	245 ^F	240 ^P	-2.0
Income Data:					
Average monthly nonagricultural wage (\$)	541	651	753 ^F	711 ^P	-5.6
Annual nonagricultural payroll (\$ thousands)	1,631	1,766	2,216 ^F	2,049 ^P	-7.5
Total personal income (\$ thousands)	4,700	5,200	6,300	7,100 ^P	†
Per capita personal income (\$)	3,694	4,225	5,115	4,700 ^P	†
Tax Data:					
Total assessed valuation (\$ thousands)	4,026	4,424	4,767	4,973	4.3
Property taxes charged* (\$ thousands)	233	268	270	286	5.9
Gross taxable sales (\$ thousands)	1,465	1,630	1,751	1,791	2.3
Net local sales tax collections (\$ thousands)	11	12	13	13	0.0
Construction:					
New dwelling units (number)	17	2	7	11	57.1
Value of new residential construction (\$ thousands)	446	50	160	351	119.4
Value of new nonresidential construction (\$ thousands)	4	4	70	12	-82.8
Value total construction (\$ thousands)	449	54	233	364	56.2
Miscellaneous:					
New car and truck registrations (number)	58	70	50	53	6.0
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	53	62	51	-17.7
Rich					
Population	1,600	1,700	1,800 ^F	1,900 ^P	5.6
Labor Market Data:					
Average civilian labor force	720	730	780 ^F	816 ^P	4.6
Average nonagricultural employment	311	317	330 ^F	367 ^P	11.2
Income Data:					
Average monthly nonagricultural wage (\$)	513	588	569 ^F	647 ^P	13.7
Annual nonagricultural payroll (\$ thousands)	1,918	2,238	2,254 ^F	2,851 ^P	26.5
Total personal income (\$ thousands)	6,100	7,000	9,300	10,700 ^P	†
Per capita personal income (\$)	3,670	4,146	4,840	5,600 ^P	†
Tax Data:					
Total assessed valuation (\$ thousands)	10,468	10,718	11,295	12,433	10.1
Property taxes charged* (\$ thousands)	658	689	729	795	9.1
Gross taxable sales (\$ thousands)	No local Sales Tax 4,108	4,884	4,789	7,545	57.5
Net local sales tax collections (\$ thousands)	No local Sales Tax 30	36	35	55	57.1
Construction:					
New dwelling units (number)	33	34	15	16	6.7
Value of new residential construction (\$ thousands)	953	1,033	458	738	61.2
Value of new nonresidential construction (\$ thousands)	472	102	400	802	100.5
Value total construction (\$ thousands)	1,440	1,157	874	1,547	77.1
Miscellaneous:					
New car and truck registrations (number)	49	39	55	44	-20.0
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	77	82	72	-12.2
Salt Lake					
Population	518,000	532,000	544,000 ^F	563,000 ^P	3.5
Labor Market Data:					
Average civilian labor force	242,530	255,410	271,523 ^F	286,275 ^P	5.4
Average nonagricultural employment	240,350	253,796	273,909 ^F	289,872	5.8
Income Data:					
Average monthly nonagricultural wage (\$)	817	879	950 ^F	1,021 ^P	7.5
Annual nonagricultural payroll (\$ thousands)	2,356,494	2,675,601	3,124,000 ^F	3,549,227 ^P	13.6
Total personal income (\$ thousands)	3,161,700	3,592,000	4,101,200	4,712,000 ^P	†
Per capita personal income (\$)	6,008	6,659	7,400	8,400 ^P	†
Tax Data:					
Total assessed valuation (\$ thousands)	1,252,643	1,298,332	2,445,311	2,614,643	6.9
Property taxes charged* (\$ thousands)	115,280	125,796	152,561	173,045	13.4
Gross taxable sales (\$ thousands)	2,654,908	3,069,699	3,634,547	4,075,665	12.1
Net local sales tax collections (\$ thousands)	19,414	22,563	26,714	29,956	12.1
Construction:					
New dwelling units (number)	8,530	10,917	9,490	6,977	-26.5
Value of new residential construction (\$ thousands)	222,793	313,153	298,254	227,885	-23.6
Value of new nonresidential construction (\$ thousands)	88,475	119,695	126,338	243,238	92.5
Value total construction (\$ thousands)	332,924	464,439	455,102	521,262	14.5
Miscellaneous:					
New car and truck registrations (number)	32,565	35,986	35,260	30,268	-14.2
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	66	70	57	-18.6

	1976	1977	1978	1979	Percent Change 1978-79
San Juan					
Population	12,200	13,000	14,100 ^f	15,000 ^P	6.4
Labor Market Data:					
Average civilian labor force	4,030	4,410	4,719 ^f	4,990 ^P	5.7
Average nonagricultural employment	2,522	2,824	3,043 ^f	3,231 ^P	6.2
Income Data:					
Average monthly nonagricultural wage (\$)	768	834	924 ^f	997 ^P	7.9
Annual nonagricultural payroll (\$ thousands)	23,525	28,251	33,758 ^f	38,658 ^P	14.5
Total personal income (\$ thousands)	34,400	40,100	49,100	56,300 ^P	1
Per capita personal income (\$)	2,831	3,260	3,833	3,800 ^P	1
Tax Data:					
Total assessed valuation (\$ thousands)	80,671	86,875	101,546	102,525	10.0
Property taxes charged* (\$ thousands)	4,774	5,149	6,022	5,869	2.5
Gross taxable sales (\$ thousands)	21,646	28,444	37,484	35,324	5.8
Net local sales tax collections (\$ thousands)	158	209	276	260	5.8
Construction:					
New dwelling units (number)	40	51	85	41	-51.8
Value of new residential construction (\$ thousands)	919	1,733	3,128	1,554	-50.3
Value of new nonresidential construction (\$ thousands)	313	850	386	6,158	1,495.3
Value total construction (\$ thousands)	1,347	2,666	3,597	7,769	116.0
Miscellaneous:					
New car and truck registrations (number)	325	392	283	248	-12.4
In lieu tax payments under Public Law 94-565 (\$ thousands)		293	385	337	-12.5
Sanpete					
Population	12,800	13,400	14,300 ^f	14,800 ^P	3.5
Labor Market Data:					
Average civilian labor force	5,480	5,390	5,715 ^f	5,816 ^P	1.8
Average nonagricultural employment	3,110	3,055	3,309 ^f	3,441 ^P	4.0
Income Data:					
Average monthly nonagricultural wage (\$)	521	563	614 ^f	654 ^P	6.5
Annual nonagricultural payroll (\$ thousands)	19,424	20,623	24,397 ^f	27,011 ^P	10.7
Total personal income (\$ thousands)	47,800	51,700	60,100	69,000 ^P	1
Per capita personal income (\$)	3,867	4,020	4,616	4,700 ^P	1
Tax Data:					
Total assessed valuation (\$ thousands)	19,016	19,048	20,416	49,526	142.6
Property taxes charged* (\$ thousands)	1,390	1,333	1,336	1,695	26.9
Gross taxable sales (\$ thousands)	29,234	32,735	36,830	44,274	20.2
Net local sales tax collections (\$ thousands)	214	241	271	325	19.9
Construction:					
New dwelling units (number)	92	141	153	144	-5.9
Value of new residential construction (\$ thousands)	2,694	4,578	4,853	5,516	13.7
Value of new nonresidential construction (\$ thousands)	1,020	950	1,264	3,442	172.3
Value total construction (\$ thousands)	3,994	5,753	6,443	9,432	46.4
Miscellaneous:					
New car and truck registrations (number)	564	679	678	598	-11.8
In lieu tax payments under Public Law 94-565 (\$ thousands)		373	392	340	-13.3
Sevier					
Population	13,100	13,700	14,400 ^f	15,000 ^P	4.2
Labor Market Data:					
Average civilian labor force	6,150	6,360	6,735 ^f	6,894 ^P	2.4
Average nonagricultural employment	3,953	4,189	4,441 ^f	4,605 ^P	3.7
Income Data:					
Average monthly nonagricultural wage (\$)	675	728	761 ^f	787 ^P	3.4
Annual nonagricultural payroll (\$ thousands)	32,009	36,612	40,582 ^f	43,463 ^P	7.1
Total personal income (\$ thousands)	59,800	69,000	80,100	92,000 ^P	1
Per capita personal income (\$)	4,800	5,294	5,788	6,100 ^P	1
Tax Data:					
Total assessed valuation (\$ thousands)	25,665	28,788	30,372	62,275	105.0
Property taxes charged* (\$ thousands)	1,614	1,792	1,803	2,125	17.9
Gross taxable sales (\$ thousands)	55,197	60,122	70,081	81,157	15.8
Net local sales tax collections (\$ thousands)	404	442	515	597	15.9
Construction:					
New dwelling units (number)	173	255	214	189	-11.7
Value of new residential construction (\$ thousands)	4,355	7,921	7,766	7,314	-5.8
Value of new nonresidential construction (\$ thousands)	2,535	1,558	3,542	2,535	-28.4
Value total construction (\$ thousands)	7,308	9,793	11,702	10,131	-13.4
Miscellaneous:					
New car and truck registrations (number)	748	779	812	669	-17.6
In lieu tax payments under Public Law 94-565 (\$ thousands)		357	389	345	-11.3

	1976	1977	1978	1979	Percent Change 1978-79
Summit					
Population	7,000	7,200	8,000 ^f	8,700 ^P	8.8
Labor Market Data:					
Average civilian labor force	4,140	4,470	4,943 ^f	5,192 ^P	5.0
Average nonagricultural employment	2,452	2,775	3,100 ^f	3,274 ^P	5.6
Income Data:					
Average monthly nonagricultural wage (\$)	643	706	679 ^f	702 ^P	3.4
Annual nonagricultural payroll (\$ thousands)	18,911	23,536	25,274 ^f	27,575 ^P	9.1
Total personal income (\$ thousands)	35,900	41,900	48,400	55,600 ^P	↑
Per capita personal income (\$)	5,276	5,833	6,382	6,400 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	39,929	48,675	89,777	115,285	28.4
Property taxes charged* (\$ thousands)	2,769	3,306	5,600	6,531	16.6
Gross taxable sales (\$ thousands)	31,783	31,080	45,172	61,406	35.9
Net local sales tax collections (\$ thousands)	232	228	332	451	35.8
Construction:					
New dwelling units (number)	345	605	577	643	11.4
Value of new residential construction (\$ thousands)	9,003	19,585	18,753	25,452	35.7
Value of new nonresidential construction (\$ thousands)	2,194	2,094	3,654	2,988	-18.2
Value total construction (\$ thousands)	11,957	22,079	23,017	29,148	26.6
Miscellaneous:					
New car and truck registrations (number)	506	597	651	571	-12.3
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	267	302	238	-21.2
Tooele					
Population	23,700	24,300	24,600 ^f	24,800 ^P	.8
Labor Market Data:					
Average civilian labor force	8,280	8,490	8,401 ^f	8,553 ^P	1.8
Average nonagricultural employment	9,435	9,786	9,705 ^f	9,884 ^P	1.8
Income Data:					
Average monthly nonagricultural wage (\$)	1,006	1,069	1,119	1,178 ^P	5.3
Annual nonagricultural payroll (\$ thousands)	113,915	125,563	130,302	139,721 ^P	7.2
Total personal income (\$ thousands)	121,100	135,100	149,600	171,800 ^P	↑
Per capita personal income (\$)	5,323	5,828	6,328	6,900 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	56,920	60,368	64,857	69,906	7.8
Property taxes charged* (\$ thousands)	3,753	4,184	4,506	4,430	-1.7
Gross taxable sales (\$ thousands)	54,135	61,570	80,190	92,499	15.4
Net local sales tax collections (\$ thousands)	396	453	589	680	15.5
Construction:					
New dwelling units (number)	147	332	272	198	-27.2
Value of new residential construction (\$ thousands)	3,779	10,255	8,300	7,163	-13.7
Value of new nonresidential construction (\$ thousands)	3,752	36,597	7,605	2,151	-71.7
Value total construction (\$ thousands)	7,933	47,603	16,586	10,253	-38.2
Miscellaneous:					
New car and truck registrations (number)	1,137	1,202	1,274	1,023	-19.7
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	601	610	527	-13.6
Uintah					
Population	17,300	18,000	18,600 ^f	19,300 ^P	3.8
Labor Market Data:					
Average civilian labor force	6,930	7,350	8,240 ^f	8,577	4.1
Average nonagricultural employment	5,404	5,951	6,651 ^f	6,984 ^P	5.0
Income Data:					
Average monthly nonagricultural wage (\$)	790	847	952 ^f	1,009 ^P	6.0
Annual nonagricultural payroll (\$ thousands)	51,254	60,462	75,947 ^f	84,563 ^P	11.3
Total personal income (\$ thousands)	83,000	94,300	115,200	132,300 ^P	↑
Per capita personal income (\$)	4,689	5,243	6,221	6,900 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	62,247	61,176	73,838	88,636	20.0
Property taxes charged* (\$ thousands)	3,982	4,006	5,019	5,525	10.1
Gross taxable sales (\$ thousands)	89,387	104,972	130,308	159,649	22.5
Net local sales tax collections (\$ thousands)	654	772	958	1,173	22.4
Construction:					
New dwelling units (number)	173	282	299	258	-13.7
Value of new residential construction (\$ thousands)	5,769	10,804	11,190	12,276	9.7
Value of new nonresidential construction (\$ thousands)	1,098	3,803	9,056	6,343	-30.0
Value total construction (\$ thousands)	7,478	15,056	21,133	19,196	-9.2
Miscellaneous:					
New car and truck registrations (number)	1,081	1,198	1,128	1,065	-5.6
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	363	502	441	-12.2

	Percent Change				
	1976	1977	1978	1979	1978-79
Utah					
Population	171,000	177,000	189,000 ^f	199,000 ^P	5.3
Labor Market Data:					
Average civilian labor force	66,230	70,040	75,852 ^f	79,919 ^P	5.4
Average nonagricultural employment	52,360	56,075	61,322 ^f	64,343 ^P	5.9
Income Data:					
Average monthly nonagricultural wage (\$)	711	769	826 ^f	886 ^P	7.3
Annual nonagricultural payroll (\$ thousands)	446,784	517,564	607,988 ^f	690,683 ^P	13.6
Total personal income (\$ thousands)	744,700	866,300	988,500	1,135,500 ^P	↑
Per capita personal income (\$)	4,384	4,834	5,331	5,700 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	414	527,136	465,226	502,665	8.0
Property taxes charged* (\$ thousands)	23,852	27,540	31,065	33,790	8.8
Gross taxable sales (\$ thousands)	526,366	644,713	764,228	866,001	13.3
Net local sales tax collections (\$ thousands)	3,849	4,739	5,617	6,365	13.3
Construction:					
New dwelling units (number)	3,402	3,599	3,264	2,324	-28.8
Value of new residential construction (\$ thousands)	88,572	116,741	120,603	99,173	-17.8
Value of new nonresidential construction (\$ thousands)	32,377	76,912	53,799	57,862	7.6
Value total construction (\$ thousands)	126,545	119,887	185,419	166,304	-10.3
Miscellaneous:					
New car and truck registrations (number)	7,390	8,297	8,086	6,742	-16.6
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	471	496	427	-13.9
Wasatch					
Population	7,000	7,300	7,700 ^f	7,800 ^P	1.3
Labor Market Data:					
Average civilian labor force	2,490	2,660	2,785 ^f	2,763 ^P	-4
Average nonagricultural employment	1,803	1,945	1,976 ^f	2,061 ^P	4.3
Income Data:					
Average monthly nonagricultural wage (\$)	604	662	713 ^f	757 ^P	6.2
Annual nonagricultural payroll (\$ thousands)	13,061	15,459	16,918 ^f	18,736 ^P	10.7
Total personal income (\$ thousands)	31,300	36,700	39,300	45,100 ^P	↑
Per capita personal income (\$)	4,524	5,022	5,245	5,800 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	17,531	19,420	19,702	20,283	2.9
Property taxes charged* (\$ thousands)	1,418	1,567	1,530	1,471	-3.9
Gross taxable sales (\$ thousands)	23,950	31,076	37,133	36,768	-1.0
Net local sales tax collections (\$ thousands)	175	228	273	270	-1.1
Construction:					
New dwelling units (number)	232	186	170	196	15.3
Value of new residential construction (\$ thousands)	6,677	6,098	5,976	7,908	32.3
Value of new nonresidential construction (\$ thousands)	675	501	852	2,106	147.2
Value total construction (\$ thousands)	7,833	7,221	7,356	10,715	45.7
Miscellaneous:					
New car and truck registrations (number)	501	511	569	435	-23.6
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	271	287	244	-15.0
Washington					
Population	18,000	19,200	20,600 ^f	22,600 ^P	9.7
Labor Market Data:					
Average civilian labor force	6,870	7,320	8,136 ^f	8,547 ^P	5.1
Average nonagricultural employment	4,731	5,150	5,794 ^f	6,139 ^P	5.9
Income Data:					
Average monthly nonagricultural wage (\$)	579	624	677 ^f	723 ^P	6.8
Annual nonagricultural payroll (\$ thousands)	32,886	38,569	47,092 ^f	53,269 ^P	13.1
Total personal income (\$ thousands)	74,700	87,600	104,000	119,500 ^P	↑
Per capita personal income (\$)	3,940	4,417	4,992	5,100 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	43,094	46,513	51,751	61,216	18.3
Property taxes charged* (\$ thousands)	3,114	3,390	3,913	4,299	9.9
Gross taxable sales (\$ thousands)	71,673	83,977	99,540	119,966	20.5
Net local sales tax collections (\$ thousands)	524	617	732	882	20.5
Construction:					
New dwelling units (number)	432	538	799	688	-13.9
Value of new residential construction (\$ thousands)	14,813	19,825	27,951	28,444	1.8
Value of new nonresidential construction (\$ thousands)	3,856	3,842	9,307	7,563	-18.7
Value total construction (\$ thousands)	19,731	24,507	38,043	37,195	-2.2
Miscellaneous:					
New car and truck registrations (number)	820	1,090	985	988	.3
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	498	529	470	-11.2

	Percent Change				
	1976	1977	1978	1979	1978-79
Wayne					
Population	1,700 ^r	1,800	1,900 ^r	1,900 ^P	0.0
Labor Market Data:					
Average civilian labor force	800	880	1,022	1,058 ^P	3.5
Average nonagricultural employment	371	437	529 ^r	557 ^P	5.3
Income Data:					
Average monthly nonagricultural wage (\$)	585	707	750 ^r	829 ^P	10.5
Annual nonagricultural payroll (\$ thousands)	2,601	3,707	4,761 ^r	5,541 ^P	16.4
Total personal income (\$ thousands)	6,300	7,500	9,700	11,100 ^P	↑
Per capita personal income (\$)	3,618	4,146	5,021	5,800 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	3,502	3,631	3,977	4,262	7.3
Property taxes charged* (\$ thousands)	191	214	228	246	7.9
Gross taxable sales (\$ thousands)	3,020	3,093	4,533	4,709	3.9
Net local sales tax collections (\$ thousands)	22	23	33	35	6.1
Construction:					
New dwelling units (number)	13	13	19	21	10.5
Value of new residential construction (\$ thousands)	372	399	723	821	13.5
Value of new nonresidential construction (\$ thousands)	233	22	403	67	-83.4
Value total construction (\$ thousands)	653	440	1,137	939	-17.4
Miscellaneous:					
New car and truck registrations (number)	93	118	101	86	-14.8
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	85	87	81	-6.9
Weber					
Population	137,000	138,000	141,000 ^r	144,000 ^P	2.1
Labor Market Data:					
Average civilian labor force	55,830	57,260	59,903 ^r	62,008 ^P	3.5
Average nonagricultural employment	42,706	43,636	46,513 ^r	48,430 ^P	4.1
Income Data:					
Average monthly nonagricultural wage (\$)	726	775	836 ^r	881 ^P	5.4
Annual nonagricultural payroll (\$ thousands)	372,197	405,631	466,779 ^r	512,270 ^P	9.7
Total personal income (\$ thousands)	757,400	826,800	936,700	1,076,100 ^P	↑
Per capita personal income (\$)	5,610	6,079	6,864	7,500 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	257,983	270,582	286,882	306,812	6.9
Property taxes charged* (\$ thousands)	21,086	23,007	24,507	25,338	3.4
Gross taxable sales (\$ thousands)	520,117	583,844	683,087	763,352	11.8
Net local sales tax collections (\$ thousands)	3,803	4,291	5,021	5,611	11.8
Construction:					
New dwelling units (number)	1,171	1,508	1,462	1,396	-4.5
Value of new residential construction (\$ thousands)	37,163	60,486	64,376	64,683	5
Value of new nonresidential construction (\$ thousands)	18,499	17,496	40,655	54,430	33.9
Value total construction (\$ thousands)	61,594	86,358	117,940	132,919	12.7
Miscellaneous:					
New car and truck registrations (number)	5,725	6,507	6,580	5,447	-17.2
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	41	47	38	-19.1
State Totals					
Population	1,232,000	1,270,000	1,317,000 ^r	1,367,000 ^P	3.8
Labor Market Data:					
Average civilian labor force	527,200	552,700	587,800 ^r	615,781 ^P	4.8
Average nonagricultural employment	462,826	488,719	525,448 ^r	553,863 ^P	5.4
Income Data:					
Average monthly nonagricultural wage (\$)	793	851	918 ^r	982 ^P	7.0
Annual nonagricultural payroll (\$ thousands)	4,402,869	4,987,925	5,785,410 ^r	6,526,416 ^P	12.8
Total personal income (\$ thousands)	6,626,900	7,516,700	8,621,500	9,904,000 ^P	↑
Per capita personal income (\$)	5,379	5,919	6,594	7,200 ^P	↑
Tax Data:					
Total assessed valuation (\$ thousands)	3,212,864	3,370,966	4,728,002	5,240,517	10.8
Property taxes charged* (\$ thousands)	240,135	265,095	309,669	341,391	10.2
Gross taxable sales (\$ thousands)	5,025,035	5,814,808	6,845,892	7,731,030	12.9
Net local sales tax collections (\$ thousands)	36,746	42,739	50,317	56,823	12.9
Construction:					
New dwelling units (number)	18,621	23,282	21,264	16,767	-21.1
Value of new residential construction (\$ thousands)	507,016	728,032	734,023	645,810	-12.0
Value of new nonresidential construction (\$ thousands)	216,803	327,096	338,623	490,274	44.8
Value total construction (\$ thousands)	773,266	1,116,850	1,143,473	1,232,105	7.8
Miscellaneous:					
New car and truck registrations (number)	66,129	72,949	72,543	61,966	-14.6
In lieu tax payments under Public Law 94-565 (\$ thousands)	—	7,472	8,192	7,112	-13.2

* By all taxing units in County.

^r Revised

Note: All population figures are Utah Population Work Committee estimates.

^P Preliminary

[†] 1976, 1977, 1978 are Bureau of Economic Analysis data. 1979 figures are Utah Department of Employment Security preliminary data which are not strictly comparable to BEA series; therefore, percent changes are not calculated.

Utah Business Statistics

Statewide Statistical Data

	January 1980	December 1979	January 1979	% Chg. From Year Ago	12 Mo. Average Ending January 1980	January 1979	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	41,930	43,437	42,446	-1.2	41,628	35,700	16.6
Livestock and Livestock Products (thous. of dol.)	33,202	31,808	32,981	0.7	31,874	27,090	17.7
Crops (thous. of dol.)	8,728	11,634	9,465	-7.8	9,751	8,700	12.1
Avg. Prices Rec'd by Farmers (15th of each mo.) (dol.)							
Beef Steers and Heifers (cwt)(thou.)	70.1	64.2	64.3	9.0	69.9	53.4	30.9
Lambs (cwt)	63.2	68.6	64.2	-1.6	63.4	59.9	5.8
Turkeys (per lb.)	na	51	50	na	na	48	na
Milk, Wholesale (cwt)	12.4	12.8	11.8	5.1	11.8	10.3	14.6
Alfalfa Hay, Baled (per ton)	64.0	59.0	50.0	28.0	54.1	49.0	10.4
Livestock Slaughtered (live weight)							
Cattle (thous. of lbs.)	15,719	15,922	19,994	-21.4	15,558.8	18,847	-17.4
Calves (thous. of lbs.)	348	na	na	na	na	na	na
Sheep and Lambs (thous. of lbs.)	241	212	206	17.0	218.9	224	-2.3
Hogs and Pigs (thous. of lbs.)	3,043	2,072	2,280	33.5	2,425.6	1,974	22.9
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,159	3,216	2,984	5.9	3,068.6	2,649	7.7
Investments, Total, Utah Member Banks (mil. of dol.) ^a	825	835	818	0.9	832.6	782	6.5
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,967	4,022	3,701	7.2	3,835.2	3,577	7.2
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	63	51	62	1.6	54.1	56.5	-4.2
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,198	1,289	1,074	11.5	1,182.3	1,143.9	3.4
Time Deposits, Total, Utah (mil. of dol.) ^a	2,706	2,683	2,565	5.5	2,599.8	2,379.5	9.3
Savings, Savings and Loan Association (mil. of dol.) ^b	1,709.9	1,726.6	1,532.6	11.6	1,632.8	1,463.3	11.6
Sale of U.S. Savings Bonds - Series E & H (thous. of dol.)	1,783.0	1,792.0	2,176.9	-18.1	2,410.2	2,377.9	1.4
New Corporations (no.)	449	364	479	-6.3	402	407	-1.4
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	35,981.4	33,574.5	47,195.8	-23.8	70,649.5	63,285.5	11.6
Sales & Use Tax	9,976.0	9,579.8	15,557.3	-35.9	30,062.9	39,271.9	-23.4
Motor Fuel Tax	4,799.1	3,697.8	10,236.6	-53.1	5,181.9	4,965.0	4.4
Individual Income Tax	10,203.5	23,172.8	13,189.0	-22.6	24,425.2	20,278.4	20.4
Corporation Franchise Tax	2,728.1	1,188.0	1,738.3	-56.9	3,197.5	2,857.3	11.9
Employment							
Civilian Labor Force (thous.) ^c	618.8	632.0	593.0	4.4	620.4	589.6	5.2
Total Employed Persons	587.1	602.7	556.7	5.5	595.4	562.0	5.9
Unemployed	31.7	30.2	29.5	7.5 ^d	28.6	26.9	6.3
Percent Total Labor Force	5.1	4.8	5.1	0.0	4.6	4.6	0.0
Employees on Nonagricultural Payrolls (thous. of jobs)	561.1	573.5	530.6	5.7	559.1	529.5	5.6
Manufacturing	90.4	88.6	83.9	7.7	89.4	80.6	10.9
Mining	17.8	18.1	16.9	5.3	17.7	16.3	8.6
Contract Construction	29.6	34.5	28.6	3.5	37.3	34.6	7.8
Transportation, Communication and Utilities	34.7	34.9	32.3	7.4	34.4	31.8	8.2
Wholesale Trade	35.4	35.6	32.1	10.3	35.1	31.5	11.4
Retail Trade	100.1	106.2	95.4	4.9	100.5	88.3	13.8
Finance, Insurance and Real Estate	26.6	26.4	25.2	5.6	25.9	24.6	5.3
Services ^d	100.9	103.0	92.4	9.2	100.5	91.5	9.8
Federal Government	35.6	35.5	36.0	-1.1	37.0	37.9	-2.4
State Government ^e	34.4	33.3	33.2	3.6	32.1	31.9	0.6
Local Government ^f	55.5	57.2	54.5	1.8	55.2	52.0	6.2
Average Weekly Hours							
Manufacturing	37.7	39.7	39.2	-3.8	38.9	39.5	-1.5
Mining	40.0	41.9	43.1	-7.2	41.4	42.8	-3.3
Contract Construction	35.2	37.0	36.7	-4.1	37.3	38.8	-3.9
Wholesale Trade	39.5	37.6	37.0	6.8	37.8	37.0	2.2
Retail Trade	27.0	28.6	28.0	-3.6	28.0	28.5	-1.8
Amount of Unemployment Comp. (thous. of dol.)	6,831.7	3,917.6	6,380.4	-7.1	3,912.2	3,388.2	15.5
Construction							
Total Construction (thous. of dol.)	96,100	79,183	110,712	-13.2	122,080.3	110,173	10.8
Residential	26,300	28,317	34,146	-23.0	59,491.2	57,757	3.0
Nonresidential	62,800	42,114	18,910	232.1	51,956.5	37,583	38.2
Public Works and Utilities	7,000	8,752	57,656	-87.9	10,621.7	14,954	-29.0
Total Permit Construction (thous. of dol.)	37,651.0	62,181.2	51,852.6	-27.4	102,081.5	93,862.5	8.8
Residential	21,103.5	27,941.1	33,610.8	-37.2	53,109.7	59,922.1	-11.4
Nonresidential	11,842.6	20,158.9	14,308.4	-17.2	40,406.5	29,145.3	38.6
Additions, Alterations and Repairs	4,704.9	14,081.2	3,933.4	19.6	8,060.3	5,871.5	-37.3
New Dwelling Units (no.)	550	609	905	-39.2	1,380.4	1,717	-19.6
Tourism/Travel							
Air Passengers (total no. on and off)	369,968	376,723	371,207	-0.4	385,895.4	356,050	8.4
Highway Traffic Count Across State Lines	25,959	31,887	25,780	0.7	38,465.9	41,480	-7.3
Transient Room Taxes (thous. of dol.)	37.3	9.9	114.0	-67.3	177.1	163.2	8.5
Visits, State, Nat'l. Parks, Monuments (thous.)	215.4	225.1	203.9	5.6	1,007.7	1,157	-12.9
General							
New Cars and Truck Sales	5,600	na	10,031	na	na	6,978	na
C.P.I. (National Index - 1967 = 100)	233.2	229.9	204.7	13.9	219.2	196.9	11.3
Telephones in Service ^g (Business)	75,576	75,310	72,001	5.0	74,059.9	70,359	5.3
Telephones in Service (Residential)	408,568	406,269	390,779	4.6	397,884.4	379,135	4.9
Electric Customers (Commercial)	30,446	32,177	31,275	-2.7	31,680	30,435	4.1
Electric Customers (Residential)	348,998	347,733	336,354	3.8	341,748	326,731	4.6
Natural Gas Customers (Residential & Commercial)	373,743	370,018	359,986	3.8	361,318	343,994	5.0
Natural Gas Customers (Industrial)	455	456	480	-5.2	652	480	35.7
Production							
Net Electric Power Utilized (mil. of kwh)	1,146.0	1,087.3	1,105.5	-3.7	910.2	936.6	-2.8
Crude Oil to Refineries (thous. of bbls.)	4,720.7	5,310.5	5,102.6	-7.5	4,885.0	5,209.2	-6.2
Crude Oil Production (thous. of bbls.)	1,960.3	2,176.1	2,335.6	-16.1	2,262.8	3,032.1	-25.4
Natural Gas Production (mil. of cu. ft.)	5,424.6	6,789.7	5,412.7	0.2	6,190.7	6,381.2	-3.0
Coal (thous. short tons)	1,200	922	820	46.3	1,017.9	915	11.2
Copper (thous. metric tons) ^h	15,659	14,787	13,758	13.8	15,677.2	15,266	2.7

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA				% Chg.	12 Mo. Average Ending		
	January 1980	December 1979	January 1979	From Year Ago	January 1980	January 1979	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non Ag. Employment (thous.)	399.9	409.3	382.9	4.4	398.5	375.9	6.0
Auth. Permit Construction (mil. of dol.)	26.0	37.5	33.2	21.7	66.3	59.7	11.1
New Dwelling Units	358	277	266	42.8	850	1,108	23.3
Postal Receipts (thous.)	5,542.3	5,094.5	5,228.2	7.4	4,849.8	4,181.2	16.0
Electric Customers (Residential)	267,900	266,505	258,480	3.6	262,304	251,287	4.4
Electric Customers (Commercial)	20,955	20,939	20,385	2.9	20,798	19,827	4.9
Natural Gas Customers (Residential)	277,128	274,447	267,141	3.1	268,566	255,299	5.2
Natural Gas Customers (Industrial)	455	456	480	5.2	463	480	-3.6
Department Store Sales (mil. of dol.)	23,233	65,167	23,952	3.0	33,874	33,042	2.5
Salt Lake City							
Non Ag. Employment (Salt Lake and Tooele) (thous.)	304.9	312.5	284.6	7.1	297.5	277.2	7.3
Auth. Permit Construction (mil. of dol.)	4.8	13.9	8.1	40.7	16.0	8.1	97.5
New Dwelling Units	47	78	133	64.7	42.8	73	41.4
Postal Receipts (thous.)	3,703.4	4,005.5	3,474.4	6.6	3,943.2	3,135.6	25.8
Natural Gas Customers (Residential)	57,738	57,364	57,826	-0.2	56,816.7	56,171	1.1
Natural Gas Customers (Industrial)	166	166	180	-7.8	172	181	-5.1
Telephones in Service (Business)	41,663	41,609	39,982	4.2	41,042	39,152	4.8
Telephones in Service (Residential)	208,839	207,906	199,879	4.5	204,327	194,834	4.9
Ogden							
Non Ag. Employment (Weber, Morgan, Davis) (thous.)	95.0	96.8	91.6	3.7	95.6	91.2	4.8
Auth. Permit Construction (mil. of dol.)	98	2.2	1.6	38.8	6.8	2.9	134.5
New Dwelling Units	1	21	23	95.7	46	38	21.6
Postal Receipts	3,735.5	4,119.5	3,418	9.3	3,813	2,890	31.9
Natural Gas Customers (Residential)	21,784	21,601	21,515	1.3	21,283	21,067	1.0
Natural Gas Customers (Industrial)	61	61	63	-3.2	62	66	-6.7
Telephones in Service (Business)	7,031	6,957	6,702	4.9	6,846	6,502	5.3
Telephones in Service (Residential)	42,507	42,316	41,163	3.3	41,882	40,550	3.3
Mountainlands (Utah, Wasatch, Summit Counties)							
Non Ag. Employment (thous.)	73.0	72.9	69.9	4.4	71.1	66.4	7.1
Auth. Permit Construction (mil. of dol.)	5.2	13.5	9.1	42.9	17.2	17.5	-1.7
New Dwelling Units	68	154	136	50.0	270	313	-13.6
Postal Receipts (thous.)	567.6	697.2	533.8	6.3	645.8	521.3	23.9
Electric Customers (Residential)	32,780	32,464	30,954	5.9	31,560	29,851	5.7
Electric Customers (Commercial)	3,079	3,044	2,874	7.1	2,943	2,753	6.9
Natural Gas Customers (Residential)	58,676	57,938	55,933	4.9	56,242	52,947	6.2
Natural Gas Customers (Industrial)	92	93	94	2.1	95	98	-3.3
Provo							
Non Ag. Employment (thous.) (Utah Co.)	67.3	67.6	65.0	3.5	65.1	61.4	6.0
Auth. Permit Construction (mil. of dol.)	1.2	2.9	3.6	66.7	3.4	4.4	-22.7
New Dwelling Units	11	17	40	72.5	66	59	11.2
Postal Receipts (thous.)	298.6	391.2	298.9	0.1	354.0	265.3	33.4
Natural Gas Customers (Residential)	15,439	15,316	14,744	4.7	14,809	14,130	4.8
Natural Gas Customers (Industrial)	43	43	47	-8.5	45	47	-4.9
Telephones in Service (Business)	6,264	6,258	5,981	4.7	6,139	5,992	2.4
Telephones in Service (Residential)	39,346	38,808	37,563	4.7	37,105	35,231	5.3
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non Ag. Employment (thous.)	11.7	12.8	12.1	5.3	13.1	12.3	6.5
Auth. Permit Construction (mil. of dol.)	7	17	11	36.4	2.3	2.1	9.5
New Dwelling Units	14	21	27	48.1	39	44	-11.6
Postal Receipts (thous.)	64.4	91.3	65.6	1.8	75.8	66.8	13.5
Electric Customers (Residential)	8,885	8,837	8,551	3.9	8,732	8,371	4.3
Electric Customers (Commercial)	1,926	1,920	1,902	1.3	1,906	1,916	-0.5
Uintah Basin (Duchesne, Daguerre, Uintah Counties)							
Non Ag. Employment (thous.)	10.3	10.9	10.2	1.0	11.5	10.6	8.5
Auth. Permit Construction (mil. of dol.)	1.2	7.7	6.8	76.5	3.1	2.2	40.9
New Dwelling Units	9	12	16	43.8	26.4	33	-20.0
Postal Receipts (thous.)	72.7	59.7	45.2	60.8	54.8	44.8	22.3
Electric Customers (Residential)	4,859	4,851	4,613	5.3	4,729	4,422	6.8
Electric Customers (Commercial)	772	755	742	4.0	753	738	2.0
Natural Gas Customers (Residential)	4,650	4,752	4,785	-7.8	4,666	4,626	0.9
Natural Gas Customers (Industrial)	7	7	9	-22.2	7.8	9	-13.3
Bear River (Box Elder, Cache, Rich Counties)							
Non Ag. Employment (thous.)	31.1	31.6	29.9	4.0	30.7	29.4	4.4
Auth. Permit Construction (mil. of dol.)	2.1	5.8	1.4	50.0	4.4	5.3	-17.0
New Dwelling Units	53	80	39	35.9	73	80	-8.5
Postal Receipts (thous.)	140.6	269.3	183.4	1.5	222.2	190.1	16.9
Electric Customers (Residential)	14,027	13,977	13,542	3.6	13,777	13,274	3.8
Electric Customers (Commercial)	1,658	1,671	1,682	1.4	1,689	1,655	2.1
Natural Gas Customers (Residential)	24,075	23,278	23,496	2.5	23,406	22,677	3.2
Natural Gas Customers (Industrial)	47	47	46	2.2	48.1	48	0.2
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non Ag. Employment (thous.)	19.4	20.0	18.5	4.9	19.8	18.3	8.2
Auth. Permit Construction (mil. of dol.)	8	86	48	66.7	2.6	2.5	4.0
New Dwelling Units	14	19	5	180	35	39	-10.8
Postal Receipts (thous.)	63.5	na	na	na	na	na	na
Electric Customers (Residential)	10,243	10,799	10,329	0.8	10,509	10,023	4.8
Electric Customers (Commercial)	1,277	1,431	1,378	-7.3	1,386	1,245	11.6
Natural Gas Customers (Residential)	9,214	8,956	8,631	6.8	8,673	8,374	3.6
Natural Gas Customers (Industrial)	15	15	12	25.0	12	12	2.5
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non Ag. Employment (thous.)	15.4	15.9	14.8	4.1	16.3	15.3	6.5
Auth. Permit Construction (mil. of dol.)	1.9	2.6	6.0	-68.3	4.6	5.0	-8.0
New Dwelling Units	34	46	56	-39.3	87	105	-17.0
Postal Receipts (thous.)	99.6	122.3	85.8	16.1	107.5	77.1	39.4
Electric Customers (Residential)	na	10,300	9,885	na	na	9,634	na
Electric Customers (Commercial)	na	2,417	2,312	na	na	2,226	na

BUSINESS STATISTICS Sources and Footnotes

Sources

Agriculture farm marketings, livestock slaughter, farm prices
U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
Savings, Savings and Loan Association: Utah savings and
loan institutions
U.S. Savings Bonds: U.S. Treasury Department
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Employment data: Utah Department of Employment
Security
Construction: Dodge Construction Statistics and BEBR
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service
Traffic Count: Utah Department of Transportation, Travel
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Visits to State and National Parks and Monuments: U.S. Forest
Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile
Dealers Registrations Service Company
Telephone, electric, natural gas customers:
cooperating Utah utility companies
Net Electric Power Utilized: cooperating
Utah power companies
Crude Oil to Refineries: cooperating
Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes

- * May not add to total due to rounding.
 (a) End of Period, includes member banks of Federal Reserve
System.
 (b) As of the close of business on last day of the month.
 (c) Current year - preliminary data, previous
year - final figures.
 (d) Includes nonprofit and religious.
 (e) Includes public schools and colleges.
 (f) Total new construction plus additions, alterations and
rebates.
 (g) Beginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231.
 (h) Includes Salt Lake County and Bountiful.
 (i) Includes Weber and Morgan Counties.
 (j) Includes Ogden and Springville.
 (k) increase from zero or decrease to zero.
 (n) not available.

UTAH ECONOMIC AND BUSINESS REVIEW

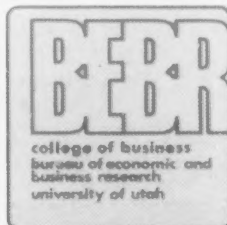
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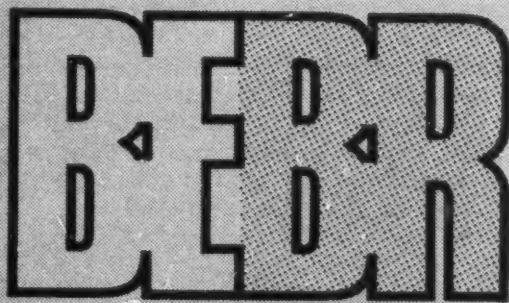
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Utah's Industrial Parks

by *J. Paul Nielsen*, Research Analyst,
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college of business
bureau of economic and
business research
university of utah

Definition

There are 70 industrial parks throughout Utah that satisfy the National Industrial Zoning Committee's description of an industrial park, i.e., "a tract of land, the control and administration of which are vested in a single body, suitable for industrial use because of location, topography, proper zoning, availability of utilities and accessibility to transportation. The uses permitted are regulated by protective minimum restrictions, including size of site, parking and loading regulations and building set-back lines from front, side, and rear yards. The front yard and side yard adjacent to streets are to be landscaped in conformance to the planning standard set for the park. All requirements are to be compatible with the community and the surrounding land uses, in accordance with the comprehensive plan, to enable a group of industries to operate within it effectively."¹

Background

Nationally, the development of industrial land into industrial parks has resulted in five basic types of complexes; Office Parks, Research and Development Parks, Moderate Performance Parks, Pipe Parks, and Decoplexes. Office and R & D parks represent research facilities and administration for concerns in light industry. Moderate Performance Parks are so named because of the combination of light and intermediate industry locating within their boundaries. Pipe Parks attract chemical process operations trading interrelated products via pipeline, and Decoplexes, which combine waste processing, source recovery, and energy utilization with industrial activity, are considered by heavy industry.

Utah's industrial parks generally fit into the first three categories, although strict delineation is not possible in many cases. For the most part, development has been utilized by firms engaged in warehousing, distribution, manufacturing, assembly, research, and administration.

¹Utah Department of Developmental Services, Division of Industrial Development, "Utah Survey of Industrial Sites," 1974.

The Site Selection Handbook explains that industrial parks are attractive to many firms because three major requirements are met.² First, a functional need is fulfilled. Second, they provide an aesthetic work environment and thus assist in job satisfaction. Third, and probably the most important reason, a significant amount of preconstruction cost and lead time can be avoided by choosing a prepared site in an industrial park.

Private developers and investors were responsible for the development of the early parks and considerable investment is represented in the hundreds of acres of prime industrial property that was purchased for industrial park purposes. The industrial park concept is relatively recent, with the model for modern industrial parks generally considered to have begun with the New England Industrial Center which opened in 1949 in Needham, Massachusetts. The first industrial parks in Utah started development in the mid-1950s on prime industrial land in South Salt Lake. The number of parks and the amount of industrial park land continued to grow throughout the 1960s and, beginning in the early 1970s, rapid development was experienced, especially in the Wasatch Front Counties. Early successes prompted other developments and soon the industrial park concept had spread into rural areas of Utah. The relative success of the move to industrial parks is seen in the addition of 17 new parks being developed in the past year and a half.

Table 1
Growth of Industrial Parks

Year Begun	Salt Lake County	Other Wasatch Front Counties ^a	Rural Counties	Total
1955-1959	2			2
1960-1965	3	2		5
1966-1968	6	3	1	10
1969-1970	2	2	1	5
1971-1972	4	1	1	6
1973-1974	1	2	1	4
1975-1976	2	9	1	12
1977-1978	4	2	3	9
1979-1980	4	6	7	17
Total	28	27	15	70

^aIncludes Davis, Weber and Utah Counties.

²Geo-Sites Index, "Site Selection Handbook," Conway Publications, Inc., Atlanta, Georgia, 1979.

Park Distribution

According to a survey conducted by the Bureau of Economic and Business Research, University of Utah in May, 1980, most industrial parks in Utah are concentrated along the Wasatch Front. As industrial parks tend to be market oriented, park location and success depend upon the comparative advantages of industrial base, market access, transportation facilities, and labor resource availability that is provided by metropolitan areas. All of Utah's non-Wasatch Front Counties contain only 21 percent of the industrial parks within the state.

This research also suggests that transportation accessibility tends to be the major location factor for the majority of Utah's parks. Thirty-seven of the total 70 industrial parks are serviced by rail and 75 percent are found within five miles of a major freeway. In addition, nine of the surveyed parks indicated they were completely filled.

The 28 industrial parks in Salt Lake County comprise less than half of the total number of parks in the state, a figure 115 percent greater than the 1970 estimate. Less than a third of all available industrial park acreage is found in these parks while also representing 43 percent of all absorbed acreage. The average park in Salt Lake County consists of 216 gross acres, 112 used acres, has 21 firms employing 768 workers and a land price between \$40,000 and \$50,000 per acre.

The number of industrial parks located in Davis, Weber, and Utah Counties increased 286 percent from 1970, nearly equaling the number found in Salt Lake County. Over half of the state's total gross acreage is offered by parks in these counties with 54 percent already in use. The average park in these areas has 443 acres, of which 296 is not used, has 11 firms, and supports 600 employees, with a land price between \$15,000 and \$20,000 per acre.

Fifteen of Utah's 70 industrial parks are in counties other than the Wasatch Front Counties. These 15 parks represent a 650 percent increase from 1970. Although comprising 13 percent of the total gross acreage, the rural counties make up only 4 percent of the total used acreage estimate. Of course, with ten of the parks coming on line since 1977, absorption may not have had sufficient time to mature. The average rural park has 186 gross acres, 18 of which are used, two firms which employ 37 total workers and a land price of \$10,000 to \$14,000 per acre.

Community Parks

There are 17 publicly supported and developed industrial parks in the State of Utah. Weber County started the first government sponsored industrial park in the state. The Weber County Industrial Development Corporation, along with numerous business organizations in Weber County, cooperated in obtaining the land and developing the Weber County Industrial Park, now known as the Weber Industrial Park. Today there are over 400 acres developed within this park. Officials involved suggest that considerable price concessions were offered to early tenants of the park, the goal being to induce further employment and the broadening of the tax base.

Another community park, the Springville Industrial Park, has been very competitive and experienced early success in attracting industry. Other industrial parks developed, owned and managed by cities and counties are found primarily in rural parts of the state. Included are: a park just south of Price in Carbon County, one in Fillmore, another in Gunnison, and others in Heber, Ephraim, and Brigham City. St. George's first industrial park of 33 acres is completely occupied, and a second industrial park of 150 acres is being developed.

Railway Parks

Of the four major railroad companies operating in the State of Utah, three (Union Pacific, Denver and Rio Grande Railroad, and Southern Pacific) have developed land for industrial park purposes within the state. In addition, the Denver and Rio Grande Railroad Company has several industrial sites next to its rail. The Southern Pacific Railroad has vast acres in the Little Mountain Industrial Park in west Weber County. Recently over a thousand acres of this property was sold to at least three different industries. Union Pacific (Upland Industries) has developed nearly 500 acres in the first six phases of its Centennial Park. They have several hundred additional acres adjacent to the present park which will be used for future phases. A major criterion these railway companies have for the sale of industrial land is that a user generate significant rail traffic. Yet, a great percentage of the Upland Centennial Park has been developed for non-rail uses or built by non-rail users.

In addition to the very considerable acreage represented by industrial parks throughout Utah, there is a significant supply of industrial land, particularly in the Wasatch Front. This property is either currently on the market, or is being considered for

Table 2

Industrial Parks by Region May, 1980

	Number of Parks	Gross Acreage*	Available Acreage	Building Square Footage	Number of Buildings	Number of Firms	Number of Employees	Asking Price Per Acre**	Rail Trackage Available
								Low High	
Salt Lake County	28	6,035	2,900	8,774,700 ^a	277 ^b	507 ^b	11,520 ^c	\$12,000 – \$85,000 ^d	17
Wasatch Front	27	11,967	7,998	8,876,000 ^c	307 ^e	256 ^e	8,730 ^a	\$8,000 – \$70,000 ^f	16
Rural	15	2,791	2,521	300,000 ^g	37 ^a	34 ^c	559 ^c	\$3,000 – \$40,000 ^d	4
Utah Total	70	20,793	13,419	17,950,700	585	797	20,809		37

^a14 parks responding

^e23 parks responding

^b24 parks responding

^f21 parks responding

^c15 parks responding

^g12 parks responding

^d11 parks responding

* Gross Acreage may contain undeveloped or unusable land.

** Price is dependent upon the factors of supply and demand as well as upon the location within a particular park.

development, or for sale for industrial purposes. Additionally, a substantial amount of property is being held by current developers of industrial parks next to already developed parks.

Institutional Parks

Three of Utah's industrial parks are owned and operated by groups that cannot be definitely classified as public or private. The University of Utah Research Park has 395 acres, 240 of which are available. There are 27 research-oriented firms in the park employing over 1,400 workers. Developed by means of a land patent from the federal government, park officials estimate that within two years the park should hold 820,000 square feet of total occupied building space and 2,900 employees.

Table 3
Industrial Park Characteristics by Region
1977 and 1980

Region	1977 ^a	1980
Salt Lake County		
Number of Parks Surveyed	17	28
Gross Acreage ^b	4,561	6,035
Absorbed Acreage	1,312	3,135
Rail Served Parks	9	17
Other Wasatch Front		
Number of Parks Surveyed	10	27
Gross Acreage ^b	2,646	11,967
Absorbed Acreage	1,043	3,969
Rail Served Parks	9	16
Rural Counties		
Number of Parks Surveyed	5	15
Gross Acreage ^b	680	2,796
Absorbed Acreage	200	270
Rail Served Parks	1	4
Utah Total		
Number of Parks Surveyed	32	70
Gross Acreage ^b	7,881	20,793
Absorbed Acreage	2,555	7,374
Rail Served Parks	19	37

^aBureau of Economic and Business Research, "Industrial Park Growth in Utah," Utah Economic and Business Review, Vol. 37, No. 2, 1977.

^bMay include undeveloped or unusable land.

The Ute Industrial Park is located just south of Fort Duchesne on the Uintah and Ouray Reservation. Developed by the Ute Indian Tribe, the park's 60 acres are nearly completely used, employing 110 to 150 tribal members. The land is available on a lease-only arrangement although financing is available through federal programs to qualifying firms.

Beneficial Development Corporation, an organization owned by the Church of Jesus Christ of Latter-Day Saints, is responsible for the development and operation of the North Salt Lake Industrial Park, formerly called the Zion's Industrial Park. Started in 1975, the park has 595 gross acres, half of which is already used. During the period between 1977 and 1980, the amount of square footage in the park nearly doubled to 450,000 with the addition of 10 new buildings. Although industrial development nationwide has declined somewhat due to the effect of high interest rates and recessionary pressures, officials at the park still express an optimistic outlook for the future.

Major Industrial Parks

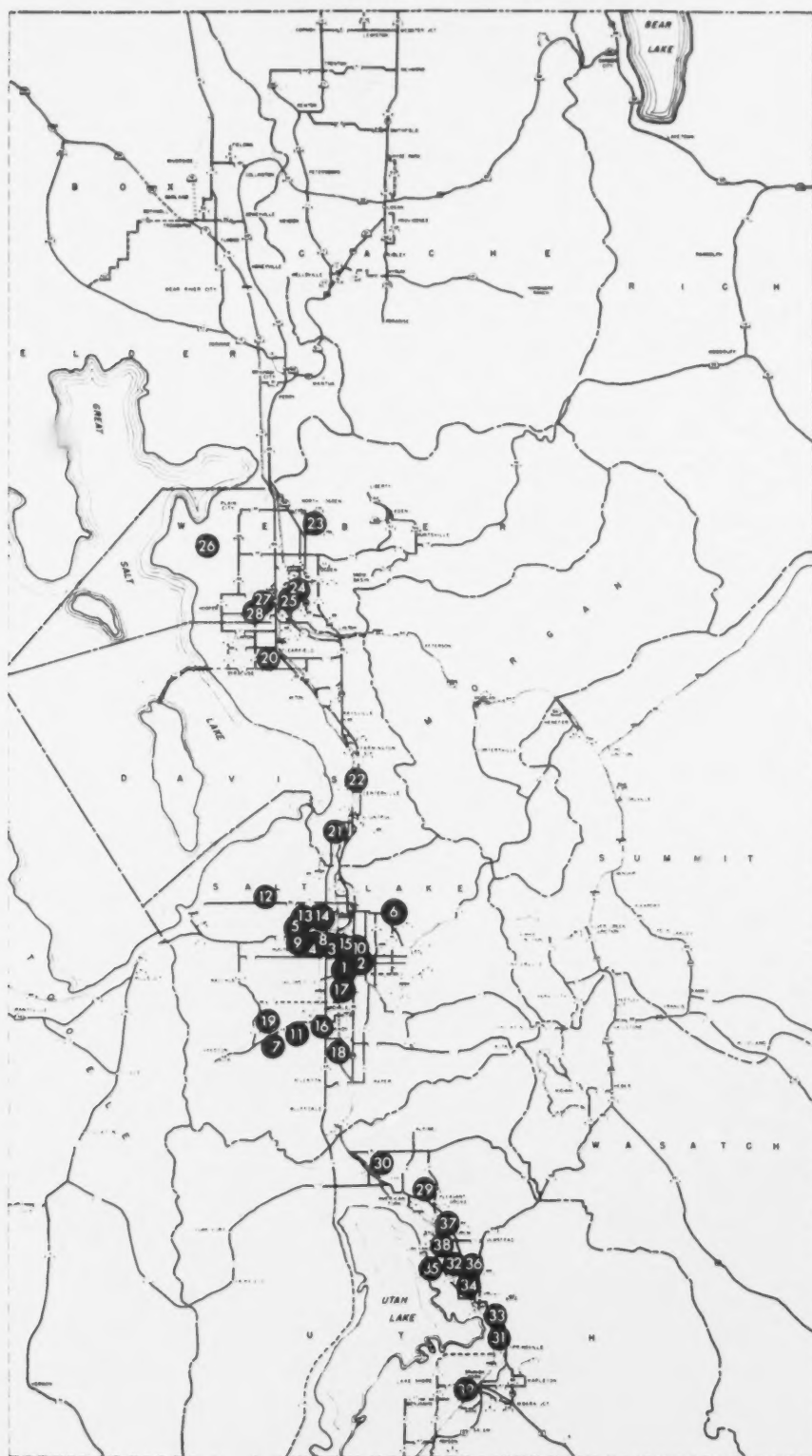
To assist in the location of particular parks in Utah, the following list and accompanying maps have been provided. This list has been limited to parks with greater than 10 acres. Gross acreage estimates may include undeveloped land or unusable areas; available acreage is area remaining after used area is deleted. Although an attempt was made to be comprehensive in this survey, some parks may have been overlooked.

Major Industrial Parks in Utah May, 1980

	Year Begun	Name	Developer/Owner	Gross Acreage	Total Available Acreage
Salt Lake County					
1	1958	Wagner	I. J. Wagner	300	8
2	1967	Yates	Yates Corporation	35	3
3	1967	Decker Lake	H. D. Moyle	1,000	300
4	1967	Salt Lake	Tracy Realty	290	30
5	1968	Centennial	Upland Industries	1,400	1,000
6	1970	U. of U. Research	University of Utah	395	240
7	1972	West Jordan	Bagley & Company	700	200
8	1972	Pioneer Square	John Price Associates	100	65
9	1972	Technology Park	John Price Associates	102	95
10	1972	Timesquare	John Price Associates	26	3
11	1974	West Valley	Ivory and Company	78	50
12	1975	S.L. International Ctr.	A. K. Utah Properties	900	403
13	1977	Cambridge	McNeil Construction	40	28
14	1978	Horizon West	Horizon West Enterprises	200	35
15	1978	Salt Lake Metro.	D. & R.G.	47	10
16	1978	Greenwood	Kehl Building Company	32	20
17	1980	Denver and Rio Grande Railroad	D. & R.G.	51	51
18	1980	Temple View	R. L. Yergensen	30	30
19	1980	West Jordan	D. & R.G.	213	213
Davis County					
20	1964	Freeport Center	Freeport Center Assoc.	735	135
21	1975	North Salt Lake	Beneficial Development	595	300
22	1979	Centerville	Steve Smoot Realty	30	27
Weber County					
23	1967	Hot Springs	Upland Industries	177	177
24	1972	Weber	Weber County Dev. Corp.	580	290
25	1974	Wadman	Wadman Industrial Park	50	25
26	1975	Little Mountain	Southern Pacific	8,000	6,000
27	1976	Ogden City	Weber County Dev. Corp.	300	150
28	1979	Cordilleran	Earl Turner	16	13
Utah County					
29	1975	Pleasant Grove	Pleasant Grove City	25	7
30	1975	Lehi	Howard, Lewis & Peterson	92	81
31	1976	Springville	Springville City	357	247
32	1976	T & T	Central Realty	40	8
33	1976	Billings	Roger Billings	368	250
34	1976	Orem/Geneva	Merrill Gappmeyer	36	20
35	1979	Tri-Lakes	Merrill Gappmeyer	65	65
36	1979	Orem Commerce	J. P. Jewkes	42	35
37	1979	Lakeview	Taylor National	36	11
38	1980	Bunker Hill	Inter-Valley Development	78	78
39	1980	Spanish Fork	Spanish Fork City	66	66
Rural Counties					
40	1966	Carbon County	Carbon County	55	40
41	1970	Brigham City	Box Elder County	50	20
42	1972	Ephraim	Ephraim City	40	25
43	1974	Gunnison	Gunnison City	40	30
44	1977	Heber	Heber City	34	34
45	1977	Fillmore	Fillmore City	360	250
46	1979	Mt. Pleasant	Mt. Pleasant City	200	200
47	1979	Blacksmith Fork	Savage Ready Mix	30	80
48	1980	West Land	D.L.N. Investments	36	36
49	1980	Nibley	Western Sierra Realty	125	125
50	1980	Valley Green	D.L.N. Investments	28	28
51	1980	Milcreek	St. George City	150	150
52	1980	Silver Creek	Silver Springs Dev.	1,500	1,500

* Gross Acreage may include undeveloped or unusable land.

Industrial Parks Along the Wasatch Front*



* Numbers correspond to preceding list.

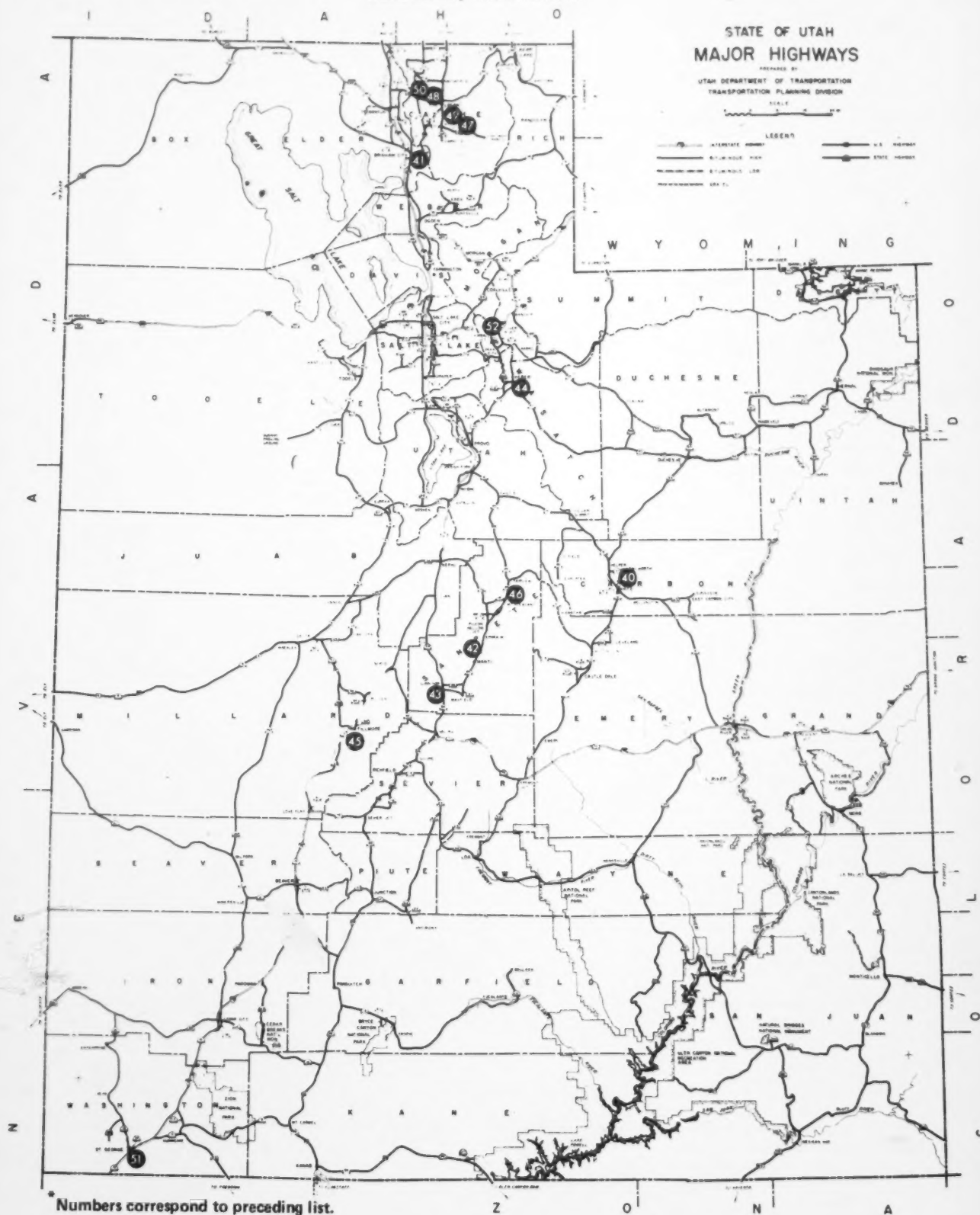
Rural County Industrial Parks*

STATE OF UTAH MAJOR HIGHWAYS

PREPARED BY
UTAH DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING DIVISION

SCALE
1" = 20 MILES

LEGEND
 - - - - - ALTERNATE ROUTE
 - - - - - RAILROAD HIGH
 - - - - - RAILROAD LOW
 - - - - - RAILROAD
 - - - - - U.S. HIGHWAY
 - - - - - STATE HIGHWAY



* Numbers correspond to preceding list.

Utah Business Statistics

Statewide Statistical Data

	February 1980	January 1980	February 1979	% Chg. From Year Ago	12 Mo. Average Ending		
					February 1980	February 1979	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	38,734	41,930	34,083	13.6	42,016	36,320	15.7
Livestock and Livestock Products (thous. of dol.)	31,832	33,202	27,104	17.4	32,268	27,536	17.3
Crops (thous. of dol.)	6,902	8,728	6,979	-1.1	9,745	8,830	10.4
Avg. Prices Rec'd by Farmers (15th of each mo.)(dol.):							
Beef Steers and Heifers (cwt)(thou.)	70.6	70.1	68.2	3.5	70.1	55.5	26.3
Lambs (cwt)	59.1	63.2	65.4	-9.6	62.9	60.4	4.1
Turkeys (per lb.)	na	na	na	na	na	na	na
Milk, Wholesale (cwt)	12.3	12.4	11.6	6.0	11.9	10.5	13.3
Alfalfa Hay, Baled (per ton)	63.5	64.0	50.5	25.7	55.2	48.7	13.3
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	16,180	15,719	15,801	2.4	15,590.4	18,479	-15.6
Calves (thous. of lbs.)	na	348	17	na	na	29	na
Sheep and Lambs (thous. of lbs.)	224	241	191	17.3	221.7	224	-1.0
Hogs and Pigs (thous. of lbs.)	2,787	3,043	1,653	68.6	2,520.1	1,981	27.2
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,199	3,159	2,997	6.7	3,085.4	2,882.5	7.0
Investments, Total, Utah Member Banks (mil. of dol.) ^a	820	825	825	-6	832.2	787.9	5.6
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,919	3,967	3,766	4.1	3,848.0	3,622.3	6.2
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	51	63	46	10.9	54.5	56.7	-3.9
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,165	1,198	1,087	7.2	1,188.8	1,147.9	3.6
Time Deposits, Total, Utah (mil. of dol.) ^a	2,702	2,706	2,633	2.6	2,605.6	2,420.7	7.6
Savings, Savings and Loan Association (mil. of dol.) ^b	1,696.4	1,709.9	1,547.0	9.7	1,645.3	1,475.2	11.3
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	na	1,783	2,353	na	na	2,366.1	na
New Corporations (no.)	359	449	372	-3.5	400.9	411	-2.5
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	142,048.0	35,981.4	115,007.0	23.5	72,902.9	70,286.6	3.7
Sales & Use Tax	73,481.6	9,976.0	78,110.0	-5.9	29,677.2	44,907.1	-33.9
Motor Fuel Tax	4,613.7	4,799.1	2,627.8	75.6	5,347.4	4,842.3	10.4
Individual Income Tax	39,290.2	10,203.5	28,182.3	39.4	25,350.9	21,875.9	15.9
Corporation Franchise Tax	836.6	2,728.1	541.4	54.5	3,222.1	2,765.1	16.5
Employment							
Civilian Labor Force (thous.) ^c	622.5	618.8	602.3	3.4	622.1	592.7	5.0
Total Employed Persons	591.2	587.1	560.9	5.4	597.9	564.7	5.9
Unemployed	31.4	31.7	32.0	-1.9	28.6	27.2	5.1
Percent Total Labor Force	5.0	5.1	5.3	-5.7	4.6	4.6	0
Employees on Nonagricultural Payrolls (thous. of jobs)	563.5	561.1	541.8	4.0	560.9	533.2	5.2
Manufacturing	90.0	90.4	83.2	8.2	90.0	81.3	10.7
Mining	17.8	17.8	16.9	5.3	17.8	16.6	7.2
Contract Construction	29.2	29.6	31.5	-7.3	37.1	34.8	6.6
Transportation, Communication and Utilities	34.6	34.7	32.5	6.5	34.6	32.0	8.1
Wholesale Trade	35.6	35.4	33.5	6.3	35.3	31.8	11.0
Retail Trade	98.7	100.1	96.8	2.0	100.7	88.7	13.5
Finance, Insurance and Real Estate	27.0	26.6	25.3	6.7	26.0	24.8	4.8
Services ^d	102.5	100.9	96.7	6.0	101.0	92.3	9.4
Federal Government	36.3	35.6	36.8	-1.4	37.0	37.0	0
State Government ^e	34.6	34.4	32.1	7.8	32.3	31.9	1.3
Local Government ^e	57.3	55.5	56.6	1.2	55.3	52.5	5.3
Average Weekly Hours:							
Manufacturing	39.4	37.7	39.2	.5	38.9	39.4	-1.3
Mining	40.7	40.6	43.2	-5.8	41.2	42.9	-4.0
Contract Construction	36.5	35.2	35.9	1.7	37.4	38.3	-2.3
Wholesale Trade	37.0	39.5	37.8	-2.1	37.7	37.2	1.3
Retail Trade	27.4	27.0	27.3	.4	28.0	28.4	-1.4
Amount of Unemployment Comp. (thous. of dol.)	6,917.2	6,831.7	5,709.5	21.2	4,012.8	3,475.7	15.5
Construction							
Total Construction (thous. of dol.)	95,100	96,100	60,832	56.3	124,936	109,830	13.8
Residential	25,600	26,300	43,994	-41.8	57,958.4	57,293	1.2
Nonresidential	62,200	62,800	13,355	365.7	56,026.9	37,684	48.7
Public Works and Utilities	14,200	7,000	3,483	307.7	11,514.8	14,974	-23.1
Total Permit Construction (thous. of dol.) ^f	57,809.0	37,651.0	75,589.3	-23.5	100,599.8	94,412.8	6.6
Residential	24,812.3	21,103.5	45,091.4	-45.0	51,419.8	59,593	-13.7
Nonresidential	27,350.5	11,842.6	21,562.9	26.8	40,888.8	29,638	38.0
Additions, Alterations and Repairs	5,646.2	4,704.9	5,944.0	-5.0	8,035.5	6,008.3	33.7
New Dwelling Units (no.)	742	550	1,292	-42.6	1,334.6	1,694	-21.2
Tourism/Travel							
Air Passengers (total no. on and off)	372,253	369,868	354,515	5.0	387,373.6	360,416	7.5
Highway Traffic Count Across State Lines	28,722	25,959	28,440	1.0	38,489.4	41,529	-7.3
Transient Room Taxes (thous. of dol.)	441.9	37.3	304.9	44.9	188.5	185.9	1.4
Visits, State, Nat'l. Parks, Monuments (thous.)	277.1	215.4	245.6	12.8	1,010.3	1,156.2	-12.6
General							
New Cars and Truck Sales	5,661	5,600	4,663	21.4	na	7,147	na
C.P.I. (National Index - 1967=100)	236.4	233.2	207.1	14.1	221.6	198.6	11.6
Telephones in Service. (Business)	75,850	75,576	72,244	5.0	74,360.4	70,679	5.2
Telephones in Service. (Residential)	409,366	408,568	392,269	4.4	399,309.2	380,847	4.8
Electric Customers (Commercial)	32,396	30,446	31,397	3.2	31,763.3	30,614	3.8
Electric Customers (Residential)	351,370	348,998	337,475	4.1	342,905.9	328,166	4.5
Natural Gas Customers (Residential & Commercial)	376,402	373,743	361,163	4.2	362,587.9	345,672	4.9
Natural Gas Customers (Industrial)	615	455	640	-3.9	649.9	651.3	-2.2
Production							
Net Electric Power Utilized (mil. of kwh)	1,035.1	1,173.3	947.6	9.2	1,016.4	943.0	7.8
Crude Oil to Refineries (thous. of bbls.)	3,823.3	4,720.7	4,640.7	-17.6	4,816.9	5,227.3	-7.9
Crude Oil Production (thous. of bbls.)	2,170.0	1,960.3	2,234.3	-2.9	2,257.4	2,998.5	-24.7
Natural Gas Production (mil. of cu. ft.)	6,638.7	5,424.6	6,265.2	6.0	6,221.8	6,353.3	-2.1
Coal (thous. short tons)	911	1,200	816	11.6	1,025.8	927	10.7
Copper (thous. metric tons) ^g	15,753	15,659	13,757	14.5	15,843.5	15,085.8	5.0

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA	February 1980	January 1980	February 1979	% Chg.	12 Mo. Average Ending		
				From Year Ago	February 1980	February 1979	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)*	401.4	399.9	385.4	4.1	399.8	378.4	5.7
Auth. Permit Construction (mil. of dol.)	35.1	26.0	47.5	-26.1	65.3	60.0	8.8
New Dwelling Units	513	358	720	-28.8	832.8	1,087.8	-23.4
Postal Receipts (thous.)	4,281.6	4,542.3	3,898.9	9.8	4,881.7	4,223.8	15.6
Electric Customers (Residential)	269,388	267,900	259,368	3.9	263,139	252,341	4.3
Electric Customers (Commercial)	21,226	20,955	20,479	3.6	20,860.3	19,933	4.7
Natural Gas Customers (Residential)	279,200	277,128	268,204	4.1	269,482.3	256,547.8	5.0
Natural Gas Customers (Industrial)	453	455	479	-5.4	460.8	478.5	-3.7
Department Store Sales (mil. of dol.)	24,360	23,233	21,689	12.3	34,096.6	33,045	3.2
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele)(thous.)*	305.7	304.9	287.8	6.2	299.0	279.2	7.1
Auth. Permit Construction (mil. of dol.)	12.4	4.8	9.9	25.3	16.2	8.6	88.4
New Dwelling Units	138	47	38	263.2	51.1	74.1	-31.0
Postal Receipts (thous.)	3,528.6	3,703.4	3,167.7	11.4	3,973.3	3,168.3	25.4
Natural Gas Customers (Residential)	57,922	57,738	57,832	.2	56,824.2	56,284.5	1.0
Natural Gas Customers (Industrial)	166	166	180	-7.8	170.8	181.2	-5.7
Telephones in Service. (Business)h	41,926	41,663	40,045	4.7	41,198.8	39,312	4.8
Telephones in Service. (Residential)h	209,183	208,839	200,693	4.2	205,034.5	195,695	4.8
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis)(thous.)*	95.7	95.0	92.5	3.5	95.9	90.4	6.1
Auth. Permit Construction (mil. of dol.)	4.2	.98	2.0	110.0	7.0	2.9	141.4
New Dwelling Units	2	1	19	-89.5	44.6	38.4	16.1
Postal Receipts †	317.5	373.5	315.7	.6	381.5	293.1	30.2
Natural Gas Customers (Residential)	21,862	21,784	21,486	1.7	21,314.3	21,074.3	1.1
Natural Gas Customers (Industrial)	60	61	63	-4.8	61.8	65.5	-5.6
Telephones in Service. (Business)l	6,936	7,031	6,701	3.5	6,866	6,526	5.2
Telephones in Service. (Residential)l	42,625	42,507	41,347	3.1	41,988.5	40,673	3.2
Mountainlands (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)*	73.5	73.0	70.6	4.1	71.3	66.9	6.6
Auth. Permit Construction (mil. of dol.)	7.0	5.2	12.0	-41.7	16.8	17.3	-2.9
New Dwelling Units	79	68	365	-78.4	246.2	308.8	-20.3
Postal Receipts (thous.)	545.7	567.6	504.7	8.1	649.2	526.5	23.3
Electric Customers (Residential)	33,014	32,780	31,004	6.5	31,727.5	30,016	5.7
Electric Customers (Commercial)	3,103	3,079	2,876	7.9	2,962	2,771	6.9
Natural Gas Customers (Residential)	58,997	58,676	56,095	5.2	56,483.8	53,262.7	6.0
Natural Gas Customers (Industrial)	93	92	94	-1.1	94.9	97.7	-2.9
Provo							
Non-Ag. Employment (thous.) (Utah Co.)*	67.6	67.3	65.1	3.8	65.3	61.9	5.5
Auth. Permit Construction (mil. of dol.)*	1.9	1.2	6.4	-70.3	3.0	4.7	-36.2
New Dwelling Units	36	11	249	-85.5	48.3	77.8	-37.9
Postal Receipts (thous.)	296.6	298.6	273.5	8.4	355.9	267.3	33.1
Natural Gas Customers (Residential)	15,500	15,439	14,769	4.9	14,870	14,190.1	4.8
Natural Gas Customers (Industrial)	43	43	46	-6.5	44.8	46.9	-4.5
Telephones in Service. (Business)l	6,257	6,264	6,042	3.6	6,157	6,012	2.4
Telephones in Service. (Residential)l	39,375	39,346	37,657	4.6	37,248	35,404	5.2
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non-Ag. Employment (thous.)*	12.0	11.7	12.2	-1.6	13.1	12.4	5.6
Auth. Permit Construction (mil. of dol.)	3.9	.7	1.5	160.0	2.5	2.1	19.0
New Dwelling Units	24	14	36	-33.3	38	45.3	-16.1
Postal Receipts (thous.)	61.4	64.4	63.9	-3.9	75.6	68.0	11.2
Electric Customers (Residential)	8,887	8,885	8,607	3.3	8,755	8,405	4.2
Electric Customers (Commercial)	1,944	1,926	1,916	1.5	1,908	1,924	-.8
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)*	10.3	10.3	10.3	0	11.5	10.7	7.5
Auth. Permit Construction (mil. of dol.)	.9	1.0	3.9	-76.9	2.7	2.5	8.0
New Dwelling Units	19	9	19	0	26.4	32.8	-19.5
Postal Receipts (thous.)	76.2	72.7	45.9	66.0	57.3	45.8	25.1
Electric Customers (Residential)	4,872	4,859	4,633	5.2	4,745	4,448	6.7
Electric Customers (Commercial)	788	772	742	6.2	756.8	743	1.9
Natural Gas Customers (Residential)	4,861	4,650	4,759	2.1	4,675	4,641	.7
Natural Gas Customers (Industrial)	7	7	9	-22.2	7.6	9	-15.6
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)*	31.4	31.1	29.8	5.4	30.8	29.6	4.1
Auth. Permit Construction (mil. of dol.)	2.8	2.1	2.5	12.0	4.4	5.3	-17.0
New Dwelling Units	33	53	50	-34.0	71.6	80.6	-11.2
Postal Receipts (thous.)	207.4	180.6	206.7	.3	222.3	194.3	14.4
Electric Customers (Residential)	13,890	14,027	13,556	2.5	13,805	13,319	3.6
Electric Customers (Commercial)	1,627	1,658	1,677	-3.0	1,685	1,661	1.4
Natural Gas Customers (Residential)	24,190	24,075	23,460	3.1	23,467	22,753.9	3.1
Natural Gas Customers (Industrial)	47	47	46	2.2	48.2	48.1	.2
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)*	19.3	19.4	18.4	4.9	19.9	18.6	7.0
Auth. Permit Construction (mil. of dol.)	.7	.8	1.7	-58.8	2.5	2.5	0
New Dwelling Units	12	14	24	-50.0	34	37.0	-8.1
Postal Receipts (thous.)	57.8	63.5	69.9	-17.3	na	na	na
Electric Customers (Residential)	10,814	10,243	10,426	3.7	10,541	10,078	4.6
Electric Customers (Commercial)	1,436	1,277	1,392	3.2	1,390	1,253	10.9
Natural Gas Customers (Residential)	9,154	9,214	8,645	5.9	8,715	8,396	3.8
Natural Gas Customers (Industrial)	15	15	12	25.0	12	12	2.5
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)*	15.6	15.4	14.9	4.7	16.4	15.4	6.5
Auth. Permit Construction (mil. of dol.)	7.4	1.9	3.5	111.4	4.9	5.0	-2.0
New Dwelling Units	62	34	79	-21.5	85.6	106.4	-19.5
Postal Receipts (thous.)	92.7	99.6	85.3	8.7	108.1	78.0	38.6
Electric Customers (Residential)	10,505	10,500	9,899	6.1	10,212	9,690	5.4
Electric Customers (Commercial)	2,272	2,294	2,315	-1.9	2,373	2,254	5.3

Utah Business Statistics

Statewide Statistical Data

	% Chg.				12 Mo. Average Ending		
	March 1980	February 1980	March 1979	From Year Ago	March 1980	March 1979	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	35,636	38,734	36,623	-2.7	41,934	36,900	13.6
Livestock and Livestock Products (thous. of dol.)	30,166	31,832	31,031	-2.8	32,196	28,200	14.2
Crops (thous. of dol.)	5,470	6,902	5,592	-2.2	9,735	8,908	9.3
Avg. Prices Rec'd by Farmers (15th of each mo.) (dol.)							
Beef Steers and Heifers (cwt) (thou.)	68.1	70.6	76.4	-10.9	69.4	58.0	19.7
Lamb (cwt)	60.7	59.1	61.5	-1.3	62.8	60.5	3.8
Turkeys (per lb.)	.40	na	na	na	na	na	na
Milk, Wholesale (cwt)	12.3	12.3	11.8	4.2	11.9	10.7	11.2
Alfalfa Hay, Baled (per ton)	68.0	63.5	52.0	30.8	56.5	48.5	16.5
Livestock Slaughtered (live weight):							
Cattle (thous. of lbs.)	16,480	16,180	15,441	6.7	15,677	17,912	-12.5
Calves (thous. of lbs.)	na	na	3	na	na	22	na
Sheep and Lambs (thous. of lbs.)	236	224	169	39.6	227.3	217	4.7
Hogs and Pigs (thous. of lbs.)	3,045	2,787	2,277	33.7	2,584.1	2,008	28.7
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,190	3,199	2,936	8.7	3,106.6	2,905.9	6.9
Investments, Total, Utah Member Banks (mil. of dol.) ^a	823	820	835	-1.4	831.2	794.7	4.6
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,853	3,919	3,724	3.5	3,858.8	3,652.7	5.6
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	51	51	42	21.4	55.3	54.4	1.7
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,080	1,165	1,040	3.8	1,192.1	1,147.8	3.9
Time Deposits, Total, Utah (mil. of dol.) ^a	2,715	2,702	2,641	2.8	2,611.8	2,453.5	6.5
Savings, Savings and Loan Association (mil. of dol.) ^b	1,697.0	1,696.4	1,573.3	7.9	1,655.6	1,492.9	10.9
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	na	na	2,140	na	na	2,336.2	na
New Corporations (no.)	424	359	518	-18.1	393.1	415	-5.3
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	52,880.1	142,048.0	52,122.0	1.5	72,966.1	65,777.2	10.9
Sales & Use Tax	3,830.6	73,481.6	176.4	2,071.5	29,981.7	38,716.6	-22.6
Motor Fuel Tax	5,588.0	4,613.7	7,797.2	-28.3	5,163.3	5,431.7	-4.9
Individual Income Tax	24,970.8	39,290.2	21,642.1	15.4	25,628.3	21,580.9	18.8
Corporation Franchise Tax	2,426.1	836.6	3,070.2	-21.0	3,168.4	2,961.8	7.0
Employment							
Civilian Labor Force (thous.) ^c	628.1	622.5	607.3	3.4	623.8	596.4	4.6
Total Employed Persons	598.8	591.2	569.1	5.2	600.4	567.7	5.8
Unemployed	29.3	31.4	27.1	8.1	28.8	27.0	6.7
Percent Total Labor Force	4.7	5.0	4.5	4.4	4.6	4.5	2.2
Employees on Nonagricultural Payrolls (thous. of jobs)	568.3	563.5	548.3	3.6	562.6	537.1	4.7
Manufacturing	90.2	90.0	83.8	7.6	90.5	82.0	10.4
Mining	17.7	17.8	16.7	6.0	17.9	16.9	5.9
Contract Construction	31.5	29.2	32.5	-3.1	37.0	35.1	5.4
Transportation, Communication and Utilities	34.8	34.6	33.1	5.1	34.7	32.3	7.4
Wholesale Trade	36.1	35.6	34.0	6.2	35.5	32.2	10.2
Retail Trade	99.1	98.7	97.3	1.8	100.9	89.2	13.1
Finance, Insurance and Real Estate	27.1	27.0	25.6	5.9	26.1	25.0	4.4
Services ^d	103.0	102.5	97.9	5.2	101.4	93.1	8.9
Federal Government	36.4	36.3	36.8	-1.1	37.0	37.0	0
State Government ^e	34.7	34.6	32.1	8.1	32.5	31.9	1.9
Local Government ^e	57.7	57.3	56.9	1.4	55.4	53.0	4.5
Average Weekly Hours:							
Manufacturing	39.4	39.4	39.0	1.0	38.9	39.4	-1.3
Mining	41.9	40.7	41.8	.2	41.2	42.8	-3.7
Contract Construction	36.7	36.5	37.2	-1.3	37.4	38.0	-1.6
Wholesale Trade	36.9	37.0	37.8	-2.4	37.6	37.4	.5
Retail Trade	27.5	27.4	27.4	.4	28.0	28.3	-1.1
Amount of Unemployment Comp. (thous. of dol.)	6,363.0	6,917.2	5,811.9	9.5	4,058.7	3,595.5	12.9
Construction							
Total Construction (thous. of dol.)	88,200	95,100	121,685	-27.5	122,146	114,211	6.9
Residential	36,900	25,600	76,128	-51.5	54,689.4	59,871	-8.7
Nonresidential	37,600	62,200	41,077	-8.5	55,737.2	39,740	40.3
Public Works and Utilities	13,700	14,200	4,480	205.8	12,283.1	14,722	-16.6
Total Permit Construction (thous. of dol.) ^f	50,657.3	57,809.0	98,699.1	-48.7	96,596.3	96,993.5	-.4
Residential	26,276.8	24,812.3	66,621.9	-60.6	48,057.7	61,107.0	-21.4
Nonresidential	19,861.9	27,350.5	24,524.9	-19.0	40,500.2	30,380.7	33.3
Additions, Alterations and Repairs	4,518.6	5,646.2	7,552.3	-40.2	7,782.7	6,332.3	22.9
New Dwelling Units (no.)	694	742	1,628	-57.4	1,256.8	1,705	-26.3
Tourism/Travel							
Air Passengers (total no. on and off)	430,403	372,253	448,188	-4.0	385,891.5	367,256	5.1
Highway Traffic Count Across State Lines	32,216	28,722	33,265	-3.2	38,402.0	41,521	-7.5
Transient Room Taxes (thous. of dol.)	31.2	441.9	1.2	2,500.0	191.0	162.4	17.6
Visits, State, Nat'l. Parks, Monuments (thous.)	395.3	277.1	396.3	-3	1,010.2	1,138.1	-11.2
General							
New Cars and Truck Sales	4,343	5,661	7,530	-42.3	na	7,136	na
C.P.I. (National Index — 1967=100)	239.8	236.4	209.1	14.7	224.2	200.3	11.9
Telephones in Service. (Business)	76,003	75,850	72,647	4.6	74,640.1	70,998	5.1
Telephones in Service. (Residential)	409,019	409,366	393,552	3.9	400,598.1	382,522	4.7
Electric Customers (Commercial)	32,551	32,396	31,509	3.3	31,850.1	30,759	3.5
Electric Customers (Residential)	352,570	351,370	338,251	4.2	344,099.2	329,539	4.4
Natural Gas Customers (Residential & Commercial)	377,277	376,402	362,207	4.2	363,843.7	347,260	4.8
Natural Gas Customers (Industrial)	616	615	644	-4.3	647.6	649.6	-.3
Production							
Net Electric Power Utilized (mil. of kwh)	996.7	1,035.1	965.8	3.2	1,019.0	949.9	7.3
Crude Oil to Refineries (thous. of bbls.)	3,875.3	3,823.3	5,312.8	-27.1	4,697.1	5,248	-10.5
Crude Oil Production (thous. of bbls.)	2,174.6	2,170.0	2,444.5	-11.0	2,234.9	2,947.3	-24.2
Natural Gas Production (mil. of cu. ft.)	7,482.1	6,638.7	6,698.3	11.7	6,287.1	6,336.7	-.8
Coal (thous. short tons)	778	911	1,184	-34.3	992	964	2.9
Copper (thous. metric tons) ^g	16,600	15,753	16,185	2.6	15,878.1	15,018.6	5.7

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA	March 1980	February 1980	March 1979	% Chg.	12 Mo. Average Ending		
				From Year Ago	March 1980	March 1979	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non-Ag. Employment (thous.)*	404.4	401.4	389.6	3.8	401.0	381.0	5.2
Auth. Permit Construction (mil. of dol.)*	30.0	35.1	64.6	-53.6	62.4	61.6	1.3
New Dwelling Units	413	513	1,052	-60.7	779.6	1,092.3	-28.6
Postal Receipts (thous.)	4,497.8	4,281.6	4,179.8	7.6	4,908.2	4,273.3	14.9
Electric Customers (Residential)	269,952	269,388	260,156	3.8	263,955	253,368	4.2
Electric Customers (Commercial)	21,224	21,226	20,578	3.1	20,914.1	20,022	4.5
Natural Gas Customers (Residential)	279,929	279,200	257,767	8.6	271,329.1	257,767	5.3
Natural Gas Customers (Industrial)	454	453	478	-5.0	458.8	478	-4.0
Department Store Sales (mil. of dol.)	28,268	24,360	28,338	-2	34,090.8	33,001	3.3
Salt Lake City							
Non-Ag. Employment (Salt Lake and Tooele) (thous.)*	307.8	305.7	287.7	7.0	300.7	281.0	7.0
Auth. Permit Construction (mil. of dol.)*	4.0	12.4	3.6	11.1	16.2	8.3	95.2
New Dwelling Units	40	138	34	17.6	51.6	70.4	-26.7
Postal Receipts (thous.)	3,681.4	3,528.6	3,431.8	7.3	3,994.1	3,209.1	24.5
Natural Gas Customers (Residential)	57,827	57,922	57,744	.1	56,831.1	56,383	.8
Natural Gas Customers (Industrial)	166	166	180	-7.8	169.6	181	-6.3
Telephones in Service. (Business) ^h	42,095	41,926	40,281	4.5	41,350	39,471	4.8
Telephones in Service. (Residential) ^h	208,978	209,183	201,317	3.8	205,672.9	196,532	4.7
Ogden							
Non-Ag. Employment (Weber, Morgan, Davis) (thous.)*	96.6	95.7	93.7	3.1	96.1	90.9	5.7
Auth. Permit Construction (mil. of dol.)*	2.5	4.2	16.5	-84.8	5.8	4.2	38.1
New Dwelling Units	76	2	78	-2.6	44.4	44.6	-4
Postal Receipts †	355.2	317.5	313.2	13.4	385.0	296	30.1
Natural Gas Customers (Residential)	21,989	21,862	21,540	2.1	21,351.7	21,094	1.2
Natural Gas Customers (Industrial)	60	60	63	-4.8	61.6	66	-6.7
Telephones in Service. (Business) ⁱ	6,896	6,939	6,728	2.5	6,880	6,553	5.0
Telephones in Service. (Residential) ⁱ	42,630	42,625	41,500	2.7	42,082.7	40,794	3.2
Mountainlands (Utah, Wasatch, Summit Counties)							
Non-Ag. Employment (thous.)*	74.1	73.5	71.3	3.9	71.5	67.4	6.1
Auth. Permit Construction (mil. of dol.)*	8.3	7.0	19.0	-56.3	15.9	17.9	-11.2
New Dwelling Units	106	79	286	-62.9	231.2	307.5	-24.8
Postal Receipts (thous.)	563.1	545.7	537.9	4.7	651.3	533.6	22.1
Electric Customers (Residential)	33,079	33,014	30,976	6.8	31,902.8	30,167	5.8
Electric Customers (Commercial)	3,128	3,103	2,892	8.2	2,982	2,788	6.9
Natural Gas Customers (Residential)	59,185	58,997	56,086	5.5	56,742.1	53,546	6.0
Natural Gas Customers (Industrial)	93	93	95	-2.1	94.7	98	-3.4
Provo							
Non-Ag. Employment (thous.) (Utah Co.)*	68.2	67.6	65.7	3.8	65.5	62.4	5.0
Auth. Permit Construction (mil. of dol.)*	2.5	1.9	3.7	-32.4	2.9	5.0	-42.0
New Dwelling Units	33	36	49	-32.7	47.0	81.4	-42.3
Postal Receipts (thous.)	319.0	296.6	314.4	1.5	356.3	271.9	31.0
Natural Gas Customers (Residential)	15,547	15,500	14,808	5.0	14,932	14,243	4.8
Natural Gas Customers (Industrial)	43	43	46	-6.5	44.6	47	-5.1
Telephones in Service. (Business) ⁱ	6,275	6,257	6,079	3.2	6,173	6,029	2.4
Telephones in Service. (Residential) ⁱ	39,220	39,375	37,728	4.0	37,372	35,574	5.1
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non-Ag. Employment (thous.)*	12.0	12.0	12.4	-3.2	13.1	12.5	4.8
Auth. Permit Construction (mil. of dol.)*	1.6	3.9	4.0	-60.0	2.3	2.4	-4.2
New Dwelling Units	35	24	73	-52.1	34.8	49.5	-29.7
Postal Receipts (thous.)	57.9	61.4	56.9	1.8	75.7	68.7	10.2
Electric Customers (Residential)	8,864	8,887	8,577	3.3	8,779	8,435	4.1
Electric Customers (Commercial)	1,946	1,944	1,905	2.2	1,911	1,923	-6
Uintah Basin (Duchesne, Daggett, Uintah Counties)							
Non-Ag. Employment (thous.)*	10.3	10.3	10.5	-1.9	11.5	10.8	6.5
Auth. Permit Construction (mil. of dol.)*	1.1	.9	2.1	-47.6	2.6	2.6	0
New Dwelling Units	24	19	36	-33.3	25.4	33.7	-24.6
Postal Receipts (thous.)	66.3	76.2	42.8	54.9	59.2	46.2	28.4
Electric Customers (Residential)	4,878	4,872	4,633	5.3	4,765.4	4,473	6.5
Electric Customers (Commercial)	777	788	737	5.4	760.1	746	1.9
Natural Gas Customers (Residential)	4,832	4,861	4,770	1.3	4,680.2	4,647	.7
Natural Gas Customers (Industrial)	7	7	8	-12.5	7.5	9	-16.7
Bear River (Box Elder, Cache, Rich Counties)							
Non-Ag. Employment (thous.)*	31.9	31.4	30.5	4.6	30.9	29.8	3.7
Auth. Permit Construction (mil. of dol.)*	4.7	2.8	2.5	88.0	4.6	5.4	-14.8
New Dwelling Units	48	33	46	4.3	71.8	80.4	-10.7
Postal Receipts (thous.)	194.0	207.4	183.0	6.0	223.2	196.6	13.5
Electric Customers (Residential)	14,464	13,890	13,561	6.7	13,880	13,358	3.9
Electric Customers (Commercial)	1,762	1,627	1,669	5.6	1,693	1,663	1.8
Natural Gas Customers (Residential)	24,246	24,190	23,505	3.2	23,529	22,815	3.1
Natural Gas Customers (Industrial)	47	47	47	0	48.2	48	.4
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non-Ag. Employment (thous.)*	19.7	19.3	18.7	5.3	20.0	18.9	5.8
Auth. Permit Construction (mil. of dol.)*	1.4	.7	1.6	-12.5	2.5	2.5	0
New Dwelling Units	24	12	32	-25	33.3	37.5	-11.2
Postal Receipts (thous.)	58.3	57.8	63.3	na	na	na	na
Electric Customers (Residential)	10,773	10,814	10,415	3.4	10,570.8	10,128	4.4
Electric Customers (Commercial)	1,438	1,436	1,395	3.1	1,394	1,259	10.7
Natural Gas Customers (Residential)	9,085	9,154	8,623	5.4	8,754	8,414	4.0
Natural Gas Customers (Industrial)	15	15	13	15.4	12.2	12	1.7
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non-Ag. Employment (thous.)*	16.0	15.6	15.4	3.9	16.5	15.5	6.5
Auth. Permit Construction (mil. of dol.)*	3.7	7.4	4.8	-22.9	4.8	4.9	-2.0
New Dwelling Units	44	62	102	-56.9	80.8	108.7	-25.7
Postal Receipts (thous.)	92.5	92.7	89.7	3.1	108.3	79.3	36.6
Electric Customers (Residential)	10,560	10,505	9,933	6.3	10,264.3	9,742	5.4
Electric Customers (Commercial)	2,276	2,272	2,333	-2.4	2,368	2,283	3.7

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BUSINESS STATISTICS Sources and Footnotes

Sources:

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Service; Utah State Parks and Recreation Department
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Telephone, electric, natural gas customers:
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Net Electric Power Utilized: cooperating
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Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^aEnd of Period, includes member banks of Federal Reserve
System
- ^bAs of the close of business on last day of the month
- ^cCurrent year—preliminary data; previous
year—final figures.
- ^dIncludes nonprofit and religious
- ^eIncludes public schools and colleges
- ^fTotal new construction plus additions, alterations and
repairs
- ^gBeginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231
- ^hIncludes Salt Lake County and Bountiful
- ⁱIncludes Weber and Morgan Counties
- ^jIncludes Orem and Springville
- ^rrevised
- ^xincrease from zero or decrease to zero
- na not available

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Industrial Revenue Bonds

by Kristin Stark, Research Assistant

Introduction

The use of a controversial form of financing called Industrial Revenue Bonds has risen sharply in Utah during the past few years. These bonds are a type of financing where a municipality, county, or state-supported university authorizes the use of tax-exempt funds to private businesses for the purpose of promoting industrial development, and for expanding health care and service facilities. The city or entity does not secure the funds nor is it obligated for repayment in any way; it is simply a sponsor for the business which secures its own financing, usually through underwriters, banks, or insurance companies.

The controversy over these bonds concerns two issues: (1) The initial presumption that IRB's attract industry into an area — critics purport that they actually have very little, if any, effect on the locational decision; and (2) The type of facility that has recently begun receiving these bonds — it is argued that issues to fast-food outlets or retail stores are contrary to the original purpose of IRB's, which is to promote industry and enhance the industrial capability of the nation.

This article will state the procedure used to obtain this type of financing, trace the history of the use of IRB's (both nationally and in Utah), outline the costs and benefits to each of the parties involved, set forth the necessary federal requirements to obtain the tax exempt status, present an inventory of Utah's 1979 issuances, and discuss the current trends in authorizations of this type of security.

Procedure

The procedure that is generally followed by a business seeking IRB financing begins with obtaining the help of a bank, insurance company, bond consul, or financial underwriter. Often a representative of the company will informally contact a city council member to find out the possibility of receiving the issue. If the climate is favorable, an Inducement Resolution is prepared for presentation at a council meeting or public hearing. The resolution authorizes the city to enter into a Memorandum of Agreement, which basically is a promise for a promise — if the city will authorize the bond issue, the company will use the proceeds for the purposes set forth and locate in the designated area. If the resolution passes and Memorandum of Agreement entered into, the underwriter or bank generally locates the funds for the bond issue.

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History of IRB's — National

In 1936, the State of Mississippi employed municipal bonds for the first time to finance an industrial project. Although these bonds were the general obligation type, i.e., repayment was the liability of the issuing entity, this use of a municipal bond was unique. Subsequently, cities in Mississippi began using revenue bonds which depend on the revenues from the project for reimbursement. From 1936 to 1948 only Mississippi utilized this form of financing. Between 1943 and 1963, 25 additional states had legalized their use, and by 1973, a total of 46 states had enacted legislation ratifying Industrial Revenue Bonds.

Issuances of IRB's had a rather slow growth in the beginning because of uncertainty concerning the legality and ultimate effects of this new financial tool. Until 1960, few investment houses would underwrite these issues due to their fear that only marginal firms were attracted to IRB's and would vacate as soon as the funds were depleted. After 1960, either because of more aggressive, industrial growth oriented municipalities or as a response to the high interest rates characteristic of the 1950s, large, nationally known firms began seeking IRB's. Rapid growth occurred from 1963 through 1969 also because of the Internal Revenue Service's ruling allowing nonprofit corporations to issue tax-exempt industrial bonds, which enabled municipalities to authorize IRB's even if their states had not enacted legislation to that effect.

Two federal governmental actions severely inhibited the growth of IRB's after 1968. First, an amendment was passed limiting the size of issue to either \$1 million or \$5 million, depending on certain specifications, to qualify for tax exemption on the interest payments (this limit was later raised to \$10 million in 1979); and secondly, the Securities and Exchange Commission ruled that all issues exceeding \$300,000 would require registration with their agency and would be subject to all regulations applicable to issues of a corporate security. Later in 1970, Congress enacted a provision which eliminated the need for the registration requirements.

History of IRB's — Utah

In 1967, the Utah State Legislature enacted the Utah Industrial Facilities Development Act legalizing the use of IRB's "providing for the acquisition, purchase, construction, reconstruction, improvement, betterment and extension of industrial facilities by

municipalities or counties . . . for the purpose of achieving greater industrial development in the State of Utah." (Utah Code Title 11, Chapter 17) In 1969 an amendment added "each State University" to the entities with issuing power "for the purpose of furthering, through industrial research and development, the instructional progress of the State University."¹ Further broadening of the statute occurred in 1976 when the provision was added relating to the purpose of the act "to [improve] . . . local health and the general welfare by inducing . . . any corporation engaged in health care services, including hospitals, nursing homes, extended care facilities, and facilities for the care of physically and mentally handicapped persons."¹ Perhaps the most significant change in the act was the 1977 amendment expanding the type of facility qualifying for these bonds to include projects "which shall be suitable to provide services to the general public, including, but not limited to, recreational, food, lodging or shopping services."¹

Utah's IRB Inventory

Utah's major cities and counties were contacted by telephone to obtain a list of the state's IRB issuances approved in 1979. The survey was required because there is no central agency in Utah that gathers information on IRB's nor is there any reporting requirement under the Utah Law. The decision whether to issue the bond is a local government decision (city or county). The results of the survey are presented in the table; the date of authorization represents the date the city passed the Inducement Resolution — in some instances, financing is still being arranged. It must be understood that the authorizing action by the unit of government does not mean the bonds have been issued and sold. Each firm that petitions a unit of government for approval and authority to issue bonds must still arrange through an appropriate underwriter the actual issuance and sale of the bonds.

The inventory reveals a total of 25 issuances valued at \$110,775,000 for the year:

Condominium (1)	— \$10,000,000
Health Care Facilities (2)	— \$11,250,000
Hotels and Motels (3)	— \$21,000,000
Industrial Projects (8)	— \$11,475,000
Recreational Facility (1)	— \$30,000,000
Retail Stores (7)	— \$12,550,000
Shopping Centers (3)	— \$14,500,000

¹ Utah Code, Title 11, Chapter 17, Amendments 1969, 1976, 1977.

Costs/Benefits of IRB's

Why would a city or a county want to issue a revenue bond? Secure financing will attract industrial and commercial development to an area, which will create jobs, broaden the tax base, upgrade the quality and quantity of commercial services, and diversify the local economy. Since the city is not liable for repayment of the bond, the only risk in the case of default by the corporation is a weakened credit rating for the unit of government. However, there are other problems. Excessive use of this financing tool could conceivably push up interest rates and thus borrowing costs to the local units of government. A large volume of IRB's on the market may require that interest rate paid to buyers be increased in order to sell them.

The criteria most frequently employed by city officials in determining whether or not to ratify the IRB issue include: the company's solvency; environmental impacts; lack of a speculative nature; contributions to the city's welfare by providing services, expanding industry, or creating jobs; size of project (cities often do not want to deal with projects they consider too small), the issuance not giving one business an unfair advantage over others.

The advantage to corporations of this kind of financing is obvious. The interest rate charged for IRB's is often 3 percentage points below the current corporate bond rate. Actually the one deterrent to the use of IRB's is the time lag involved in getting approval by the city council and lining up the financing.

Investors are attracted to IRB's because of the tax exempt status of the interest payments which are exempt from federal income taxes. One disadvantage to these investors would be that the return on their investment is smaller in percentage terms. This is offset, however, because the return could be higher in real terms, depending on their tax bracket. The only other disadvantage would be the possibility that the company would default on the loan, but the risks of that happening are no greater than in many other investment instruments, and may be less because of the lower cost to the firm.

Tax Exempt Status

The following is an excerpt from a leaflet published by a local law firm on Industrial Revenue Bonds:²

²Prepared by the law offices of Fox, Edwards and Gardiner, Salt Lake City, 1980.

In addition to compliance with Utah law concerning industrial bond financing, such bond issues must comply with the applicable federal law in order that the interest on such bonds may be exempt from federal income taxation. The federal income tax requirements are quite complex, but in general, interest earned from industrial revenue bonds is exempt from federal income tax if the bond issue is for:

A. Exempt Facilities (no limit on dollar amount).

1. Residential real property for family units (presently under Congressional review).
2. Sports facilities.
3. Convention or trade show facilities.
4. Airports, docks, wharfs, mass commuting facilities, parking facilities, or storage or training facilities directly related to any of the foregoing.
5. Sewage or solid waste disposal facilities or facilities for the local furnishing of electric energy or gas.
6. Air or water pollution control facilities
7. Facilities for the furnishing of water (subject to several additional requirements).
8. Qualified electric generating facilities.

B. Industrial Parks (no limit on dollar amount)

The acquisition or development of land as a site for an industrial park, including, the provision of water, sewage, drainage, or similar facilities or of transportation, power or communication facilities, which are incidental to the use of the site as an industrial park.

C. Small Issues

1. IRB bond issues of \$1 million or less where substantially all of the proceeds are used for the acquisition of land or depreciable property. Included in the \$1 million are all prior bond issues which qualified for a federal income tax exemption, which were in

2. IRB bond issues of \$10 million or less where substantially all the proceeds are used for the acquisition of land or depreciable property. Included in the \$10 million are:

- ## Current Trends

proceeds from a Minnesota Small Business Finance Authority issue are distributed to a group of several firms rather than to just one firm. Thus, small businesses that were formerly excluded from the IRB market can now band together and qualify for financing collectively.

Are IRB's indeed inducements to corporations to locate in a given area? If so, is the estimated \$1 billion loss in tax revenue worth it? It is argued by some, most notably Ralph Nader (the well known consumer advocate), that with the widespread use of IRB's, they are no longer inducements to industries making locational decisions. According to a recent national study of IRB's conducted by Lawrence Litvak, the company's decision where to locate was influenced by the IRB issuance in only one-third of the cases.⁴

Some important questions need to be addressed:

- Do the firms currently receiving these bonds meet the criteria the legislature had in mind when Utah's law was passed?
- Should the state establish specific guidelines and reporting requirements for agencies issuing the bonds?
- Do the IRB's provide unfair competition for alternative financing systems?

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Industrial Revenue Bond Issues

	Location	Amount	Date Authorized
<u>Condominiums</u>			
Park Place Associates	Provo	\$10,000,000	12/20/79
<u>Health Care Facilities</u>			
Golden Living Center	Provo	3,750,000	5/31/79
Hospital Corporation	Carbon County	7,500,000	12/1/79
		11,250,000	
<u>Hotels and Motels</u>			
Pamdesgo Associates	Park City	4,000,000	8/25/79
Provo Hotel	Provo	10,000,000	6/26/79
Ruby's Inn	Garfield County	7,000,000	na
		21,000,000	
<u>Industrial</u>			
Williams Research	Ogden	500,000	8/1/79
Eyring Research Institute	Provo	1,000,000	8/16/79
California-Portland Cement	Carbon County	1,000,000	5/8/79
Swire Bottling Company	Salt Lake County	100,000	10/22/79
American Parts System	Salt Lake City	1,000,000	8/1/79
Nabisco, Inc.	Salt Lake City	900,000	11/2/79
Pepsi-Cola Bottling Company	Salt Lake City	5,775,000	12/20/79
Easton Aluminum	Salt Lake City	1,200,000	7/1/79
		11,475,000	
<u>Recreational Facilities</u>			
Heritage Mountain ¹	Provo	30,000,000	2/22/79
<u>Retail Stores</u>			
Smith Food King Properties	Layton	5,000,000	9/1/79
Gregory Soter Associates	Provo	1,000,000	12/6/79
Wolf's	Park City	500,000	5/1/79
Nortons	Provo	2,000,000	7/19/79
Acorn Building Components West	Clearfield	700,000	na
Wycoff Properties	Salt Lake County	1,750,000	1/3/79
Shire Warehouse Associates	Salt Lake City	1,600,000	12/1/79
		12,550,000	
<u>Shopping Centers</u>			
Holiday Village Associates	Park City	1,000,000	5/1/79
Old Mill Town	Provo	10,000,000	10/25/79
Irving Investors, Inc.	Salt Lake City	3,500,000	12/17/79
		14,500,000	

¹This project qualifies as a "sports facility" under exempt facilities where there is no dollar limit for tax exemption.

Utah Business Statistics

Statewide Statistical Data

	% Chg.				12 Mo. Average Ending		
	April 1980	March 1980	April 1979	From Year Ago	April 1980	April 1979	% Chg.
Agriculture							
Cash Receipts from Farm Marketings (thous. of dol.) ^a	48,418	35,636	35,858	35.0	42,960.7	37,600	14.3
Livestock and Livestock Products (thous. of dol.)	42,103	30,166	30,164	39.6	33,190	28,800	15.2
Crops (thous. of dol.)	6,315	5,470	5,694	10.9	9,768.8	9,040	8.3
Avg. Prices Rec'd by Farmers (15th of each mo.) (dol.)							
Beef Steers and Heifers (cwt)(thous.)	62.6	68.1	79.4	-21.4	68.0	60.5	12.4
Lambs (cwt)	55.0	60.7	63.1	-12.8	63.1	60.8	2.1
Turkeys (per lb.)	na	4	na	na	na	na	na
Milk, Wholesale (cwt)	12.2	12.3	11.4	7.0	12.0	10.8	11.1
Alfalfa Hay, Baled (per ton)	67.5	68.0	52.0	29.8	57.8	48.6	18.9
Livestock Slaughtered (live weight)							
Cattle (thous. of lbs.)	17,768	16,480	13,284	33.8	16,050.7	17,566	-8.6
Calves (thous. of lbs.)	na	na	4	na	na	20	na
Sheep and Lambs (thous. of lbs.)	266	236	189	40.7	233.4	214	9.1
Hogs and Pigs (thous. of lbs.)	3,376	3,045	2,285	47.7	2,674.9	2,036	31.4
Finance							
Loans, Total, Utah Member Banks (mil. of dol.) ^a	3,120	3,190	2,947	5.9	3,121	2,922.3	6.8
Investments, Total, Utah Member Banks (mil. of dol.) ^a	817	823	840	-2.7	829.3	801.5	3.5
Deposits, Total, Utah Member Banks (mil. of dol.) ^a	3,897	3,853	3,779	3.1	3,868.5	3,680.2	5.1
Demand Deposits of Banks, Total, Utah (mil. of dol.) ^a	57	51	47	21.3	56.1	54.7	2.6
Other Demand Deposits, Total, Utah (mil. of dol.) ^a	1,156	1,080	1,133	2.0	1,194.0	1,150.4	3.8
Time Deposits, Total, Utah (mil. of dol.) ^a	2,684	2,715	2,599	3.3	2,618.9	2,477.8	5.7
Savings, Savings and Loan Association (mil. of dol.) ^b	1,724.7	1,647.0	1,579.7	9.2	1,667.7	1,507.7	10.6
Sale of U.S. Savings Bonds—Series E & H (thous. of dol.)	1,046	3,104	1,713	-38.2	2,370.8	2,284.1	3.8
New Corporations (no.)	421	424	323	30.3	401	412	-2.6
Tax Collections by the State of Utah (thous. of dol.)							
Total Tax Collections	63,876.3	52,880.1	40,775.5	56.7	74,891.1	65,430.8	14.5
Sales & Use Tax	4,296.4	3,830.6	2,951.5	45.6	30,093.8	38,545.6	-21.9
Motor Fuel Tax	2,176.1	5,588.0	1,291.6	68.5	5,237.0	5,447.2	-3.9
Individual Income Tax	28,850.1	24,970.8	18,812.7	53.4	26,464.8	21,290.6	24.3
Corporation Franchise Tax	17,852.9	2,426.1	12,613.7	41.5	3,605	3,154.9	14.3
Employment							
Civilian Labor Force (thous.) ^c	624.8	622.4	598.9	4.3	626.0	595.8	5.1
Total Employed Persons	596.9	593.2	575.1	3.8	602.2	568.4	5.9
Unemployed	27.9	29.2	23.8	17.2	29.1	27.3	6.6
Percent Total Labor Force	4.5	4.7	4.0	12.5	4.6	4.6	0.0
Employees on Nonagricultural Payrolls (thous. of jobs)	565.0	562.9	541.1	4.4	564.6	534.2	5.7
Manufacturing	90.4	90.2	84.3	7.2	91.0	82.7	10.0
Mining	17.9	17.7	17.4	2.9	17.9	17.0	5.3
Contract Construction	32.4	31.4	33.6	-3.6	36.9	34.5	7.0
Transportation, Communication and Utilities	34.9	34.6	31.0	12.6	35.0	32.3	8.4
Wholesale Trade	34.8	34.7	32.8	6.1	35.7	32.0	11.6
Retail Trade	95.5	95.1	94.8	0.7	101.0	89.0	13.5
Finance, Insurance and Real Estate	27.1	27.1	25.4	6.7	26.2	25.2	4.0
Services ^d	102.7	103.4	96.4	6.5	101.9	92.8	9.8
Federal Government	37.6	36.5	36.8	2.2	37.1	36.8	0.8
State Government ^e	34.1	34.7	32.4	5.2	32.6	32.0	1.9
Local Government ^e	57.8	57.5	56.2	2.8	55.5	52.8	5.1
Average Weekly Hours:							
Manufacturing	39.8	39.4	38.7	2.8	39.0	39.3	-0.8
Mining	39.7	41.9	39.6	0.3	41.2	42.5	-3.1
Contract Construction	38.2	36.7	37.1	3.0	37.5	37.9	-1.1
Wholesale Trade	36.8	36.9	37.5	-1.9	37.5	37.5	0.0
Retail Trade	27.1	27.5	28.1	-3.6	27.9	28.3	-1.4
Amount of Unemployment Comp. (thous. of dol.)	6,173.6	6,363.0	3,929.7	57.1	4,245.7	3,673.2	15.6
Construction							
Total Construction (thous. of dol.)	87,900	88,200	141,791	-38.0	117,655	114,344	2.9
Residential	31,000	36,900	73,464	-57.8	51,150.7	60,304	-15.2
Nonresidential	21,900	37,600	65,963	-66.8	52,065.3	40,081.6	29.9
Public Works and Utilities	35,100	13,700	2,364	1,384.8	15,011.1	14,080.8	6.6
Total Permit Construction (thous. of dol.) ^f	66,442.5	50,657.3	119,716.4	-44.5	92,156.8	98,865.4	-6.8
Residential	30,648.5	26,276.8	64,553.9	-53.5	37,674.8	60,180.6	-37.4
Nonresidential	29,813.0	19,861.9	47,841.7	-37.7	38,997.8	33,099.4	17.8
Additions, Alterations and Repairs	5,981.0	4,518.6	7,320.8	-18.3	7,671.1	5,988.5	28.1
New Dwelling Units (no.)	666	694	1,869	-64.9	1,155	1,686	-31.5
Tourism/Travel							
Air Passengers (total no. on and off)	341,673	430,403	358,727	-4.8	384,471	371,246	3.6
Highway Traffic Count Across State Lines	36,593	32,216	36,691	-0.3	38,394	41,616	-7.7
Transient Room Taxes (thous. of dol.)	24.7	31.2	12.1	104.1	192.1	162.0	18.6
Visits, State, Nat'l. Parks, Monuments (thous.)	761.8	395.3	1,124.6	-32.3	980.0	1,129.0	-13.2
General							
New Cars and Truck Sales	4,594	4,343	na	na	na	na	na
C.P.I. (National Index - 1967=100)	242.5	239.8	211.5	14.7	226.8	201.9	12.3
Telephones in Service, (Business)	76,193	76,003	72,808	4.6	74,922.2	71,287	5.1
Telephones in Service, (Residential)	407,241	409,019	391,389	4.1	401,919	384,145	4.6
Electric Customers (Commercial)							
Electric Customers (Residential)							
Natural Gas Customers (Residential & Commercial)	377,262	377,277	362,733	4.0	365,055	348,915	4.6
Natural Gas Customers (Industrial)	621	616	645	-3.7	646	648	-0.3
Production							
Net Electric Power Utilized (mil. of kwh)	995.1	996.7	919.3	8.2	1,025.3	954.2	7.5
Crude Oil to Refineries (thous. of bbls.)	4,306.6	3,875.3	4,348.9	-1.0	4,693.6	5,193	-9.5
Crude Oil Production (thous. of bbls.)	2,039.9	2,174.6	2,343.5	-13.0	2,209.6	2,911.0	-24.1
Natural Gas Production (mil. of cu. ft.)	6,785.4	7,482.1	6,453.3	5.1	6,314.8	6,362.0	-0.7
Coal (thous. short tons)	606	778	885	-31.5	968.8	945	2.5
Copper (thous. metric tons) ^g	16,370	16,600	16,199	1.1	15,892.3	14,931	6.4

Utah Business Statistics

MULTI-COUNTY PLANNING DISTRICT STATISTICAL DATA				% Chg.	12 Mo. Average Ending		
	April 1980	March 1980	April 1979	From Year Ago	April 1980	April 1979	% Chg.
Wasatch Front (Salt Lake, Tooele, Davis, Weber, Morgan Counties)							
Non Ag. Employment (thous.)*	403.8	404.4	383.0	5.4	402.7	382.3	5.3
Auth. Permit Construction (mil. of dol.)	35.3	30.0	87.2	-59.5	58.1	63.5	-8.5
New Dwelling Units	344	413	1,267	72.8	703	1,075	-34.6
Postal Receipts (thous.)	4,551.5	4,497.8	4,137.4	10.0	4,942.7	4,311.5	14.6
Electric Customers (Residential)	267,900	269,952	260,105	3.0	264,605	254,338	4.0
Electric Customers (Commercial)	20,955	21,224	20,563	1.9	20,947	20,111	4.2
Natural Gas Customers (Residential)	279,603	279,929	269,015	3.9	272,211	259,001	5.1
Natural Gas Customers (Industrial)	457	454	480	-4.8	456.9	476	-4.0
Department Store Sales (mil. of dol.)	30,282	28,268	30,128	0.5	34,103.6	33,099.8	3.0
Salt Lake City							
Non Ag. Employment (Salt Lake and Tooele) (thous.)*	306.4	307.8	289.5	5.8	302.1	286.2	5.6
Auth. Permit Construction (mil. of dol.)	7.5	4.0	17.7	-57.6	15.4	9.1	-69.2
New Dwelling Units	44	40	59	-25.4	50.4	64	-21.3
Postal Receipts (thous.)	3,749.3	3,681.4	3,404.3	10.1	4,022.8	3,240.0	24.2
Natural Gas Customers (Residential)	57,679	57,827	57,503	0.3	56,844.7	56,483	0.6
Natural Gas Customers (Industrial)	168	166	179	-6.1	168.7	180	-6.3
Telephones in Service. (Business) ^h	43,227	42,095	40,437	6.9	41,583	39,616	5.0
Telephones in Service. (Residential) ^h	209,566	208,978	201,923	3.8	206,310	197,343	4.5
Ogden							
Non Ag. Employment (Weber, Morgan, Davis) (thous.)*	97.5	96.6	93.5	4.3	96.4	91.2	5.7
Auth. Permit Construction (mil. of dol.)	2.6	2.5	13.3	-80.5	4.9	4.8	2.1
New Dwelling Units	34	76	43	-20.9	43.7	36	21.4
Postal Receipts †	335.9	355.2	325.8	3.1	385.8	299.8	28.7
Natural Gas Customers (Residential)	21,931	21,989	21,483	2.1	21,389	21,109	1.3
Natural Gas Customers (Industrial)	61	60	63	-3.2	61.4	66	-7.0
Telephones in Service. (Business) ^h	6,876	6,896	6,737	2.1	6,892	6,578	4.8
Telephones in Service. (Residential) ^h	42,759	42,630	41,589	2.8	42,180	40,914	3.1
Mountainlands (Utah, Wasatch, Summit Counties)							
Non Ag. Employment (thous.)*	74.5	74.1	70.2	6.1	71.9	67.7	6.2
Auth. Permit Construction (mil. of dol.)	13.9	8.3	19.7	-29.4	65.4	18.1	-14.9
New Dwelling Units	125	106	309	-59.5	215.9	309	-29.9
Postal Receipts (thous.)	568.0	563.1	540.7	5.0	653.6	543.4	20.3
Electric Customers (Residential)	32,780	33,079	30,967	3.0	31,981	30,261	5.7
Electric Customers (Commercial)	3,079	3,128	2,892	6.5	2,998	2,799	7.1
Natural Gas Customers (Residential)	59,487	59,185	56,754	4.8	56,970	53,849	5.8
Natural Gas Customers (Industrial)	95	93	98	-3.1	95	98	-3.3
Provo							
Non Ag. Employment (thous.) (Utah Co.)*	68.7	68.2	64.7	6.2	65.8	62.7	4.9
Auth. Permit Construction (mil. of dol.)	1.9	2.5	2.3	-17.4	2.9	5.0	-42.0
New Dwelling Units	18	33	57	-68.4	43.8	83	-47.2
Postal Receipts (thous.)	315.5	319.0	303.3	4.1	357.3	276.6	29.2
Natural Gas Customers (Residential)	16,024	15,547	15,207	5.4	15,000	14,293	4.9
Natural Gas Customers (Industrial)	43	43	48	-10.4	45	47	-5.1
Telephones in Service. (Business) ^h	6,335	6,275	6,042	4.8	6,198	6,041	2.6
Telephones in Service. (Residential) ^h	36,300	39,220	34,573	5.0	37,516	35,737	5.0
Central Utah (Juab, Millard, Sanpete, Sevier, Piute, Wayne Counties)							
Non Ag. Employment (thous.)*	12.7	12.0	12.1	5.0	13.2	12.6	4.8
Auth. Permit Construction (mil. of dol.)	2.1	1.6	1.8	16.7	2.3	2.3	0.0
New Dwelling Units	36	35	39	-7.7	34.8	48	-27.5
Postal Receipts (thous.)	70.5	57.9	73.9	-4.6	75.4	70.3	7.3
Electric Customers (Residential)	8,925	8,864	8,609	3.7	8,805	8,464	4.0
Electric Customers (Commercial)	1,926	1,946	1,904	1.2	1,913	1,921	-0.4
Uintah Basin (Duchesne, Daguerre, Uintah Counties)							
Non Ag. Employment (thous.)*	10.7	10.3	10.3	3.9	11.5	10.8	6.5
Auth. Permit Construction (mil. of dol.)	4.2	1.1	1.9	121.1	2.8	2.6	7.7
New Dwelling Units	25	24	24	4.2	25	32	-21.6
Postal Receipts (thous.)	66.8	66.3	40.7	64.1	61.5	46.5	32.3
Electric Customers (Residential)	4,859	4,878	4,647	4.6	4,783	4,498	6.3
Electric Customers (Commercial)	772	777	745	3.6	762	749	1.8
Natural Gas Customers (Residential)	4,806	4,832	4,729	1.6	4,812	4,657	3.3
Natural Gas Customers (Industrial)	7	7	8	-12.5	7	9	-17.8
Green River (Box Elder, Cache, Rich Counties)							
Non Ag. Employment (thous.)*	32.8	31.9	31.1	5.5	31.0	30.0	3.3
Auth. Permit Construction (mil. of dol.)	5.1	4.7	2.8	82.1	4.8	5.3	-9.4
New Dwelling Units	41	48	55	-25.5	70.6	78	-9.5
Postal Receipts (thous.)	209.1	194.0	196.7	6.3	224.2	199.2	12.6
Electric Customers (Residential)	14,027	14,464	13,588	3.2	13,917	13,398	3.9
Electric Customers (Commercial)	1,658	1,762	1,678	1.2	1,691	1,667	1.5
Natural Gas Customers (Residential)	24,189	24,286	23,505	2.9	23,586	22,891	3.0
Natural Gas Customers (Industrial)	47	46	47	0.0	48	48	0.0
Southeastern (Carbon, Emery, Grand, San Juan Counties)							
Non Ag. Employment (thous.)*	19.8	19.7	19.0	4.2	20.1	19.0	5.8
Auth. Permit Construction (mil. of dol.)	2.4	1.4	1.5	60.0	2.6	2.5	4.0
New Dwelling Units	35	24	32	9.4	33	37	-10.0
Postal Receipts (thous.)	59.3	58.3	na	na	na	na	na
Electric Customers (Residential)	10,792	10,773	10,428	3.5	10,601	10,179	4.1
Electric Customers (Commercial)	1,430	1,438	1,387	3.1	1,398	1,263	10.7
Natural Gas Customers (Residential)	9,177	9,085	8,730	5.1	8,791	8,447	4.1
Natural Gas Customers (Industrial)	15	15	12	25	13	12	4.2
Southwestern (Beaver, Iron, Washington, Garfield, Kane Counties)							
Non Ag. Employment (thous.)*	16.1	16.0	15.4	4.5	16.6	15.5	7.1
Auth. Permit Construction (mil. of dol.)	3.5	3.7	4.8	-27.1	4.7	5.0	-6.0
New Dwelling Units	60	44	143	-58.0	74.1	114	-35.0
Postal Receipts (thous.)	103.0	92.5	90.2	14.2	109.4	80.2	36.4
Electric Customers (Residential)			9,954			9,793	
Electric Customers (Commercial)			2,360			2,318	

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BUSINESS STATISTICS Sources and Footnotes

Sources:

Agriculture farm marketings, livestock slaughter, farm prices:
U.S. Department of Agriculture
Loans, Investments, deposits: Federal Reserve reports
Savings, Savings and Loan Association: Utah savings and
loan institutions
U.S. Savings Bonds: U.S. Treasury Department
New Corporations: Utah Secretary of State
Tax Collections: Utah State Tax Commission
Employment data: Utah Department of Employment
Security
Construction: Dodge Construction Statistics and BEBR
Air Passengers: Salt Lake International Airport, statistics
service
Traffic Count: Utah Department of Transportation, Travel
Analysis Unit
Visits to State and National Parks and Monuments: U.S. Forest
Service; Utah State Parks and Recreation Department
Truck and car sales: Utah Automobile
Dealers Registrations Service Company
Telephone, electric, natural gas customers:
cooperating Utah utility companies
Net Electric Power Utilized: cooperating
Utah power companies
Crude Oil to Refineries: cooperating
Utah oil refineries
Copper production: U.S. Bureau of Mines
Coal production: U.S. Department of Energy
Oil and gas production: State of Utah
Division of Oil, Gas and Mining

Footnotes:

- * May not add to total due to rounding
- ^aEnd of Period, includes member banks of Federal Reserve
System
- ^bAs of the close of business on last day of the month
- ^cCurrent year—preliminary data; previous
year—final figures.
- ^dIncludes nonprofit and religious
- ^eIncludes public schools and colleges
- ^fTotal new construction plus additions, alterations and
repairs
- ^gBeginning January 1979, data reported in metric tons; to
convert metric tons to short tons, multiply by 1.10231
- ^hIncludes Salt Lake County and Bountiful
- ⁱIncludes Weber and Morgan Counties
- ^jIncludes Orem and Springville
- ^rRevised
- x Increase from zero or decrease to zero
- na Not available

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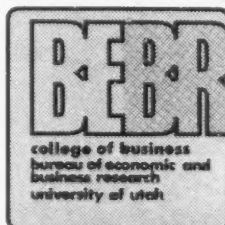
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